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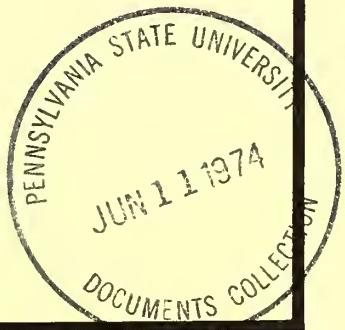
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**A STATISTICAL REPORTING SYSTEM
FOR THE CATFISH FARMING INDUSTRY,
METHODOLOGY AND 1970 RESULTS**

December, 1972





A STATISTICAL REPORTING SYSTEM FOR THE CATFISH
FARMING INDUSTRY, METHODOLOGY
AND 1970 RESULTS

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U. S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
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and
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(Subcontractor)



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I. INTRODUCTION

The farm-raised or farm-cultured catfish industry, until about 1968, was based almost entirely on the market for live fish for stocking farm ponds, other fish farming operations, pay lakes and reservoirs. This market continues to be important to the industry and its continued growth seems likely. More recently, however, greater emphasis has been directed toward the problems of developing broader markets for finished catfish products.

There is a growing realization that long-run success or failure is not as dependent on production efficiency as it is on the degree of effectiveness of the marketing function. One of the first results of this broader outlook was the organization of processing companies, many of which were producer owned and directed. Early marketing efforts were directed toward independent restaurants, grocery chains, and fast food restaurants, with little appreciation for the product requirements of each of these retail systems. Problems resulting from inadequate portion control, custom preparation and packaging, and continuity of supply, combined to severely limit orderly market growth.

Without satisfactory solutions to these problems, and without sufficient appreciation for the costs involved in changing consumer attitudes, a second generation marketing thrust was undertaken aimed at creation of demand outside traditional catfish consuming areas. These efforts have met similar limitations.

The first step needed to overcome some of the marketing difficulty is to develop pertinent information about the existing situation. This includes examining markets that are available or that show good potential, determining which markets can be profitably served now, and forecasting which ones appear to be the most profitable on a long-range basis. To accomplish this, methods must be devised to assure a continuous flow of useful market information for all levels of product flow, from farm to consumer.

It is the awareness of this need that provides the basis for this project; the design of an integrated information system for the regular gathering and reporting of catfish industry data.

Part III of this report is devoted to a description of the proposed information system. Each of the areas of emphasis, farm production, domestic wild catch, imports, processor activity, wholesale product markets, and live hauler markets, is discussed separately. The proposed system is an integrated approach to the collection and reporting of data for the purpose of making managerial decisions more effective in all segments of the farm-cultured catfish industry.

Part IV is an analysis of catfish production and marketing activity during 1970, along with information on farm production intentions for 1971. The data for this

analysis was gathered in tests of the initial plans for the system design; and the resulting survey and response experience was used to further develop the proposed information system described in Part III.

II. SUMMARY

The System

An information system is proposed herein, directed specifically at the information requirements and data gathering problems of the catfish industry. Periodic information releases are scheduled covering every major phase of the farm-cultured catfish endeavor:

- a. Semi-Annual Production Estimate Releases—Reports scheduled for public release in March and August, providing information on adult catfish inventories plus stocking and harvesting intentions for the year.
- b. Quarterly Producer Marketing Releases—Reports scheduled for release in May, August, November and February, showing volume and value of foodsize catfish sales by farm producers during the preceding quarters.
- c. Annual Fingerling Production Estimate Release—An annual report scheduled for March release, providing estimates of the available supply of fingerlings by major size category for the current production year, and reporting fingerling sales during the previous year.
- d. Quarterly Processor Production and Marketing Reports—Reports scheduled for May, August, November and February, reporting production and sales of finished catfish products by processors during the previous quarter.
- e. Annual Wholesale Market Report—An annual report scheduled for January release, containing national estimates of wholesale catfish product sales during the previous year, by type, and market outlet.
- f. Annual Report of Live Hauler Activities—An annual release scheduled for January, covering live hauler purchases and sales of live, foodsize catfish during the previous year.

Recommended procedures for obtaining needed data and preparing these reports have been prepared in the form of a detailed "Operations Manual." This manual, along with necessary computer programs and mailing lists, has been submitted to the National Marine Fisheries Service.

Industry Data for 1970

The following information for 1970 was gathered during the process of developing and testing the proposed information system:

- a. There were approximately 1,600 commercial catfish producers in 1970; and more than 40 thousand acres of reservoirs were devoted to foodsize catfish production. More than 10,000 acres were utilized in fingerling production.
- b. Farmers are beginning to produce foodsize catfish in cages and raceways; approximately 200 producers utilized one method or the other. Most of the cage production occurred outside the South, the primary catfish producing area; while almost two-thirds of the total number of raceways used were in the Southeastern states.
- c. The number of fingerlings stocked per acre ranged from less than 1,500 to over 5,000; the most common stocking was between 1,500 and 2,500 per acre.
- d. Producers in the Delta Region and states outside the South indicated a preference to stock fingerlings nine inches or more in length. In contrast, producers in the Southeastern states revealed plans to stock less than 10 percent of their total acreage in that size category.
- e. Farm producers harvested and sold approximately 34 million pounds (liveweight) of foodsize catfish during 1970, valued at more than \$13 million. The Delta Region accounted for approximately 72 percent of the total poundage and about 65 percent of the total dollar volume.
- f. Farm sales to processors of all types (including retail seafood establishments which purchase live fish and do their own processing) accounted for almost 60 percent of total live sales. Sales to firms which were exclusively farm-cultured catfish processors totaled approximately 5.8 million pounds (liveweight), about 17 percent of total poundage. The live hauler market was insignificant except in the Delta Region, where such sales were about 20 percent of total pounds sold.
- g. Catfish fingerling producers reported sales in excess of 214 million fingerlings in 1970, about one-half of which were four to six inches in size. Less than one percent were 10 inches or longer.
- h. Since the need for it was not anticipated until the 1970 survey was under way, no information on year-end stocks of fingerlings by size category was obtained. This information is to be collected and reported in subsequent years, however.
- i. Production of processed fish by those who processed farm-cultured catfish exclusively totaled approximately 3.4 million pounds (dressed weight and dressed weight equivalent). Sales were about 3.1 million pounds, almost all of which went to restaurants and fish dealers.

j. More than 50 percent of processor shipments were to destinations beyond 300 miles from the processing plant, indicating an interregional pattern to the overall marketing effort.

k. Almost 48 million pounds (dressed weight and dressed weight equivalent) of catfish of all types were marketed in the Southern and Central United States during 1970. A great portion of this, approximately 23 million pounds, was domestic wild catfish. Farm-cultured catfish accounted for approximately 42 percent of the total, or about 20 million pounds. Imported catfish products totaled almost 5 million pounds; however, a much smaller volume was forecast for 1971.

l. Approximately 29 million pounds (dressed weight and dressed weight equivalent) of catfish of all types were marketed through wholesale fish dealers in the Southern and Central United States; more than 75 percent of this consisted of domestic wild fish. Farm-cultured catfish sold through these outlets totaled approximately 1.6 million pounds.

m. Wholesale distributors in the Southeastern United States reported that their greatest volume of sales was to retail fish dealers. In contrast, restaurants were the primary customers for wholesalers in the South Central and North Central regions.

III. PROPOSED INFORMATION GATHERING AND REPORTING PROCEDURES

A. Introduction

Industry in the United States has come to rely on a regular flow of market intelligence and performance data as a basis for all sorts of operational decisions. Rarely is it possible to make intelligent decisions concerning future plant locations, production rates, purchasing negotiations, inventory controls, or selling efforts, to mention only a few, without a thorough knowledge of product supply and demand characteristics.

The farm-cultured catfish industry is no exception; the need for such information exists now, and as industry volume and investment continue to grow, information requirements will be even greater. It is important that industry managements know: how much catfish is now being sold, to what type of accounts, in what forms, at what price; and what trend, seasonal and cyclical patterns are developing.

Data has been gathered for some time regarding some aspects of the processing segment of the farm-cultured catfish industry; including figures on the yearly catch of domestic wild catfish, and importation of both cultivated and wild catfish from Central and South America. Other "one-time" surveys and studies have been conducted regarding various segments of the industry, and relative to certain aspects of consumer demand. However, these latter efforts have been irregular and uncoordinated.

This section of the report describes a proposed integrated information system, including some of these ongoing efforts, but based chiefly on the collection of new information. The system description covers the collection and processing of data, along with the generation of needed reports, for a more complete picture of production and movement of catfish through domestic markets. Each segment of the system; Wild Catch Data, Imports Data, Farm Production and Marketing, Processor Production and Marketing, Wholesale Markets, and Live Hauler Activities, is briefly summarized herein. Detailed instructions, survey schedules, and data processing programs required for the implementation of the system have been prepared and are contained in an "Operations Manual" supplied to the National Marine Fisheries Service.

The National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration, U. S. Department of Commerce, has primary responsibility for Federal support to the Nation's marine fisheries industries, including its statistical needs. That agency's responsibility extends, at the present time, to the statistical needs of the farm-cultured catfish industry. It is the intention of NMFS to implement and continue this information gathering and reporting program while this responsibility exists.

B. Wild Catch Data

A regular flow of information concerning catch of domestic wild catfish can be a valuable management tool, not only to businesses and individuals in that segment of the fisheries industry, its suppliers and its customers, but to farm-cultured catfish producers, processors and marketers as well. Knowledge of volume of the previous season's catch, number of boats devoted to that activity, prices received, and other data can greatly influence investment decisions within the wild catch segment of the industry. The value of this type of information may be even greater to those whose primary interest is farm-cultured catfish, since domestic wild catfish is their major competitor.

This segment of the proposed information system (much of which is in fact an ongoing effort of the National Marine Fisheries Service) provides for gathering such information on an annual basis, nationwide, and the issuance of reports in November each year. The procedure involves an annual census (through personal interviews) of fishermen, marketers of catfish, and others knowledgeable regarding commercial catch of domestic wild catfish, commencing in January each year.

Where possible, data is obtained directly from commercial fishermen by directly interviewing them, or by estimating their individual yearly catch on the basis of where they fish, the kind and amount of equipment used, number of boats and how well maintained, and other evidence of prosperity and efficiency of their operations. Other sources of catch data include seafood wholesalers, volume retail seafood markets, and game wardens. Information obtained from these secondary sources is used to cross-check information from commercial fishermen or the estimates made of their catch.

These techniques have been largely based on two major factors:

- a. National Marine Fisheries Service does not consider it feasible to survey all licensed commercial fishermen for the purpose of obtaining catch data. This would require a mail-type survey and returns would likely be spotty. The license fee in most states enables anyone to buy a commercial license. As a result, there are literally thousands of licenses issued yearly and only a few are ever used for truly commercial ventures. In addition, many commercial fishermen do not wish to reveal their catch volume. Historically, the commercial fisherman has been known for his strong individualistic personality. Therefore, it is frequently necessary to estimate his activity. Personal observation is required for such estimates. Furthermore, personal interviews with wholesalers serve to back up and verify estimates of the commercial fishermen's catch and offer a means of obtaining names of new fishermen operating in a specific geographic area.

- b. All information regarding domestic catch of seafood has always been furnished on a voluntary basis. There is no desire on the part of the National Marine Fisheries Service to change this procedure. The agency feels that the quality of data would deteriorate if periodic reports from commercial fishermen were compulsory.

The Southeastern Region of the National Marine Fisheries Service, through its Statistical Branch in New Orleans, is presently responsible for gathering data on the nationwide wild catfish catch once each year (during the period January through September). Although all regions report their wild catch to this office, the activity is essentially limited to the Southern States (the Gulf and southeast Atlantic coastal states, plus Tennessee, Arkansas, portions of Oklahoma and southern Missouri). Data is now being gathered along the coastal areas by agents of the various statistical offices (18 in number at the present time); and an agent stationed in Nashville, Tennessee is responsible for gathering data on wild catch in the interior (the noncoastal areas of Alabama, Mississippi and Texas, and the states of Arkansas, Tennessee, Kentucky, Missouri and Oklahoma). Data for the entire state of Louisiana is collected by the New Orleans' branch. The extreme western portions of the Carolinas and extreme northern Georgia are not now being surveyed, since there is no evidence that the catch in those areas is sufficient to justify the additional effort required to monitor this activity.

While the existing practice has inherent weaknesses (e.g., dependence on estimates, the necessity of time consuming personal visits in order to obtain information on which to base catch estimates, and basing them on the estimates of others, compounding the probability of error), it is about the best that can be achieved with the methods used. On the other hand, the data collection agents have a degree of expertise and familiarity with their respective areas which would be difficult if not impossible to equal by centralized survey procedures which did not include them.

Therefore, the existing procedures are recommended for inclusion in the integrated system. However, types of data to be collected and reported should be expanded to include seasonality and disposition of the catch, in addition to the quantity and geographic information now gathered.

These procedures in their present form provide information (in the form of reasonable estimates) on the input of domestic wild catfish to the national market place. This portion of the system, together with supplemental information from wholesale markets, will provide a quantitative picture of the wild catch movement through domestic markets.

C. Imports Data

Imported catfish products have assumed an importance, at least among wholesale markets, equal to that of farm-cultured catfish. They are certainly a major

competitor for the wholesale dollar in terms of price and marketable form. Therefore, such imports are of concern to both the domestic wild and farm-cultured catfish industry segments.

Data on imports of catfish products is now being gathered, through cooperation with the United States Customs Department, and published on a monthly basis. A yearly comparative analysis of imports is provided for, by year, port of entry and country of origin.

This is a current activity of the National Marine Fisheries Service. Its inclusion as part of the proposed information system is considered important in view of the present and potential competitive threat to the domestic catfish industry from foreign sources.

D. Farm Production and Marketing

Producers of farm-cultured catfish must have continuous, reliable statistical information on which to base production and marketing decisions if the industry is to continue to expand. Adequate programs to provide this essential data are not currently in existence.

1. Public Information Releases

The proposed information system provides for issuance of semi-annual production estimates of foodsize catfish, quarterly marketing reports of foodsize catfish, and annual fingerling production and sales reports. These proposed reports (formats of which are exhibited in Appendix A, pp. 81 — 86) are in the form of tabular presentations of data for three regions: (1) the Delta States, including Mississippi, Arkansas, and Louisiana; (2) the Southeastern States—Georgia, Alabama, Tennessee, South Carolina and Florida; and (3) the remaining states, including Texas, Missouri, California, Oklahoma, Kansas and all others.

2. Surveys

The planned reports will necessitate frequent monitoring of the activities and the intentions of farm producers of fingerlings and foodsize catfish.

- a. Production Estimate Surveys. Information from which the adult catfish production estimates are to be made comes from two surveys, and includes the producers in all three production categories, reservoirs, cages and raceways. The late winter survey is to be made in January and February each year and seeks information on January 1 inventories and producers' stocking

intentions for the current season, by stocking dates and expected harvest periods by areas, regions, and totals. Information obtained during this survey is to be used in preparation and release of reports in early March, providing the information during the critical period when farm producers are making their production and marketing plans for the year. The second survey, initiated in July, will obtain information from the participants in the mid-winter survey. Its purpose is to ascertain how closely these producers followed their earlier production estimates. The midsummer public release will give revised estimates, based on actual stocking and harvesting during the first six months of the year.

- b. Quarterly Market Surveys. Data for the quarterly marketing reports of foodsize catfish is to be obtained from surveys of farm producers, conducted in early January, April, July and October, covering marketing activities during the preceding quarter. Public releases, in February, May, August and November, will report volume and value of sales by types of buyers, on a quarterly basis and cumulative for the year.
- c. Fingerling Production and Sales Survey. Information for the annual fingerling production and sales report is to be gathered during a survey of known fingerling producers in early January. The public release, in March, will provide timely estimates by region (for producer planning purposes) of the available supply of fingerlings for the current production year, and the number of fingerlings sold during the past year, by price and size.

3. Survey Operations Summary

- a. The Universe. The universe will consist of all known producers of farm-cultured catfish and fingerlings in the 48 contiguous states. Past efforts at identifying these producers have resulted in a list of more than 1,600 foodsize catfish producers and about 570 fingerling producers. Annual updating is required, through contacts with agencies and individuals knowledgeable in the farm-cultured catfish industry, to identify producers who enter or exit the industry. Each prospective addition to the universe is to be mailed a short questionnaire (see Appendix B, p. 121) asking for his method of production and size of his operation.
- b. Sampling. For the purpose of sampling, or selecting groups of names from the universe from which data will be collected, the universe is to be divided according to type of operation (fingerling producers, foodsize catfish producers who utilize reservoirs,

those who raise foodsize catfish in cages, and those who raise foodsize catfish in raceways). Each of the above will be further divided into 14 geographic areas at the present time, the 13 main catfish producing states or areas (see Figure 1), and the "Other" area composed of all remaining states. This will permit estimates on a state-by-state basis within each production type. At the present time, all producers other than those using reservoirs are selected for survey, since they are so few in number (about 750 in 1970). Reservoir producers, because of their greater number, are to be selected on a proportional basis (a random sample according to mathematical formula).

- c. Data Collection and Preparation. Each of the selected producers is to be mailed a questionnaire appropriate to his particular type of operation (see Appendix B, pp. 122 — 135), along with a letter of explanation. A follow-up letter and an additional copy of the questionnaire will be mailed after 10 days to producers who do not respond promptly. After 10 additional days, nonrespondents are to be contacted by telephone or through personal visits in a final effort to gain 100 percent participation.

When returned, the questionnaires must be edited for completeness, and prepared for computer input. The reports can then be prepared for both in-house analysis and public release.

E. Processor Production and Marketing

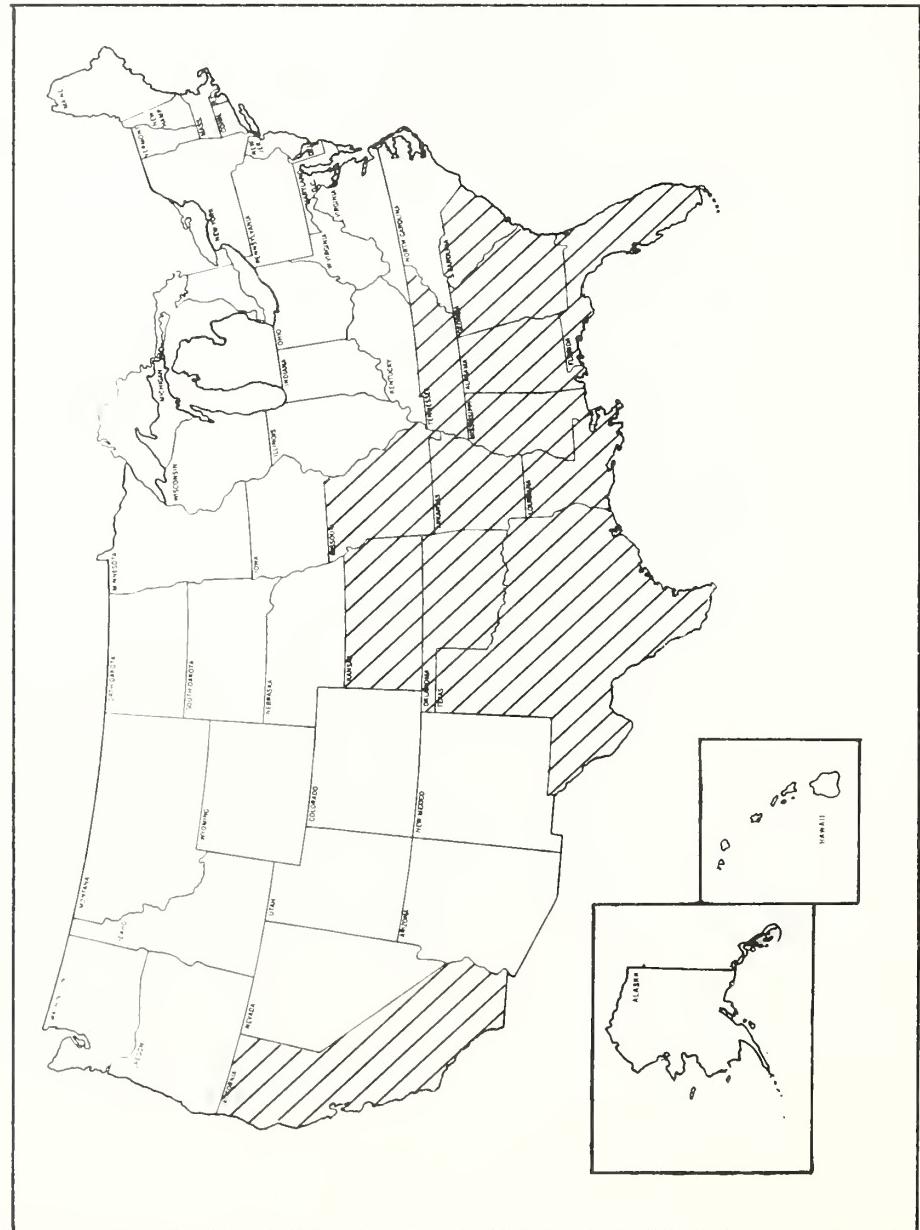
This segment of the industry, at the present time, accounts for only a small portion of the total movement of farm-cultured catfish. However, it will necessarily assume a much more important role as the industry grows, and as processors continue efforts to expand market opportunities. It was with this realization that steps were taken early in 1970 to gather data from processors regarding their production, sales, and inventories of the processed product. A regular and adequate flow of both production and marketing information is especially essential to processors during this period of industry growth. Such data is necessary for decisions on purchasing and production, plant and personnel utilization, inventories and warehousing facilities, and sales efforts.

1. Public Information Releases

The proposed information system will also provide additional information on market disposition of processed products and characteristics of product demand to farm producers and others interested in processor activities.

FIGURE 1

PRIMARY CATFISH PRODUCING STATES, 1970



Proposed quarterly releases (exhibited in Appendix A, pp. 87 — 94), in May, August, November and February, are to report processor production, purchase price of live catfish, inventories, and sales by type of processed product, type of customer, distance of shipments, and prices received. These reports will cover processor activities during the periods January to March, April to June, July to September, and October to December, respectively.

2. Survey Operations Summary

There are ongoing efforts to obtain monthly production and sales information from processors by the National Marine Fisheries Service. Much of the existing survey procedure is to be preserved and built upon, in the belief that it is basically sound. It is a personal, confidential type inquiry, preferable because of the nature of the data collected.

- a. The Universe. The survey universe consists of all known processors of farm-cultured catfish. A list of names of processors along with names of chief executive officers is currently maintained, and usually varies in number of listings between 13 and 20. In 1970, there were 17 considered to be active processors, although many were operational only for short periods during the year. The universe must be continuously updated through regular contact with processors, the trade association—Farm-Raised Catfish Processors of America, and other knowledgeable sources in the industry.
- b. Sampling. When conducting surveys of a universe of substantial numbers, it is usually considered most feasible to select a smaller group within that universe (as being representative of the total) for participation in the survey. However, there are relatively few farm-cultured catfish processors. Therefore, it is considered advisable to gather the needed information from all of them.
- c. Data Collection and Preparation. The proposed system provides for monthly telephone contacts, beginning shortly after the close of each calendar month, with all the processors. During the telephone interviews, processors are to be asked to furnish information required for the survey (see Appendix B, p. 136). These personal contacts are considered important, not only to facilitate collection of survey data, but also to serve as a means for gathering other industry intelligence important to future analysis—e.g., names of new processors, names of those who have ceased operations, remarks concerning availability of live fish, and other related information.

When completed, the questionnaires must then be edited for completeness and accuracy, and hand tabulated to provide input for preparation of monthly in-house analysis and public releases on a quarterly basis.

F. Wholesale Markets

Wholesale seafood outlets probably represent the largest single volume potential of any of the existing markets for farm-cultured catfish. Yet, the degree of market penetration has been smaller than in other existing outlets. One of the reasons, doubtless, has been the lack of knowledge of the market. There simply has not been any detailed information available concerning wholesale demand for catfish.

1. Public Information Releases

This segment of the proposed information system is designed to gather and report data concerning the type of products required by these wholesale markets, and the volume of various catfish products moving through this channel of distribution. Reports (exhibited in Appendix A, pp. 95 - 114) are to be issued annually in January containing national estimates for the previous year on wholesale sales by type of catfish, and market disposition by region, and summaries of survey responses concerning other characteristics of the wholesale catfish demand.

2. Survey Operations Summary

Data for the needed reports is to be gathered through a mail survey of wholesale fish dealers.

- a. The Universe. The universe consists of all known wholesale fish dealers in the survey area, as chosen by the survey agency. Three sources of names and addresses of the fish dealers are recommended: (1) National Marine Fisheries Service SL Series, "Wholesale Dealers in Fishery Products"; (2) National Fisheries Institute, Incorporated, "Blue Book"; and (3) the telephone directory, "Yellow Pages," for cities over 50,000 in population in the survey area. These sources should furnish thorough coverage of the various types of wholesale fish markets, first hand and subsequent general wholesalers of live and processed fish, as well as specialists serving the restaurant and institutional trade. All of these sources, and any others available, must be screened each year in order to keep the list current.

Approximately 1,000 such wholesale dealers have previously been identified in the Southern and Central United States.

- b. Sampling. For the purpose of sampling, or selecting dealers from which data is to be collected, the universe is to be divided into state groups. Half the total in each state group (but not to exceed 50 from any one state) is to be chosen by a random sample as survey participants.
- c. Data Collection and Preparation. The survey of wholesale fish dealers is to be conducted annually during the month of November, covering their marketing activity during the previous 12 months. A survey form, or questionnaire (see Appendix B, p. 138) is to be mailed to all firms in the sample groups (selected as described above), along with a letter explaining the purpose of the survey and soliciting their cooperation. Ample time is to be allowed for response, after which an additional appeal will be mailed to those who have not returned their completed questionnaires. In the 1970 survey, more than 500 fish dealers were contacted; and an overall response rate of almost 39 percent was experienced. Upon return, the questionnaires are to be edited for accuracy and completeness. The data will then be hand tabulated for in-house analysis and preparation of public releases; or it may be processed for input to computers to accomplish the tabulations for reporting.

G. Live Hauler Activities

A large share of current production of farm-cultured catfish is marketed to farm ponds, pay lakes and other markets requiring live, unprocessed fish. An unknown quantity of live domestic wild catfish also moves through these markets. Therefore, the activities of the haulers of live fish are a natural concern. Adequate programs to monitor this activity are not now in existence.

1. Public Information Releases

The proposed information system provides for the issuance of annual reports showing purchases of catfish by live haulers, the types of fish, prices paid, type of hauling contracts, geographic destination of hauls, and market disposition of live fish. These reports are to be issued in January, covering live hauler activities during the 12 months prior to the survey month. Formats of these proposed reports are shown in Appendix A, pp. 115 — 118.

2. Survey Operations Summary

Collection of data on which to base the above reports, under proposed procedures, is to be accomplished through annual surveys of known live haulers.

- a. The Universe. The universe, for the purpose of these surveys, consists of all known haulers of live fish in the survey area, as chosen by the survey agency. The National Marine Fisheries Service, in cooperation with agencies of the various states, has compiled a list of live haulers licensed to operate in some states. At the present time, the lists cover nine of the 19 Southern and North Central states (as well as some in other regions of the Nation); and they consist of approximately 100 names and addresses of live fish haulers. Lists are not available from some states which do not license fish haulers, and others simply have not responded to repeated attempts to collect the information. It is considered most important that efforts to build a more complete mailing list be continued with renewed vigor. Reliable survey results are not possible without better knowledge as to the number of live haulers and where they are located.
- b. Sampling. Because of the probable incompleteness of information on the universe at this time, and even with a list of up to 200 names of live haulers, a canvas, or a 100 percent sample, is proposed, rather than a proportional selection.
- c. Data Collection and Preparation. Survey forms, or questionnaires (see Appendix B, p. 140), are to be mailed annually in November to all known live fish haulers in the survey area, along with a letter of explanation. After allowing ample time for response, an additional appeal for cooperation is to be mailed to those who have not responded.

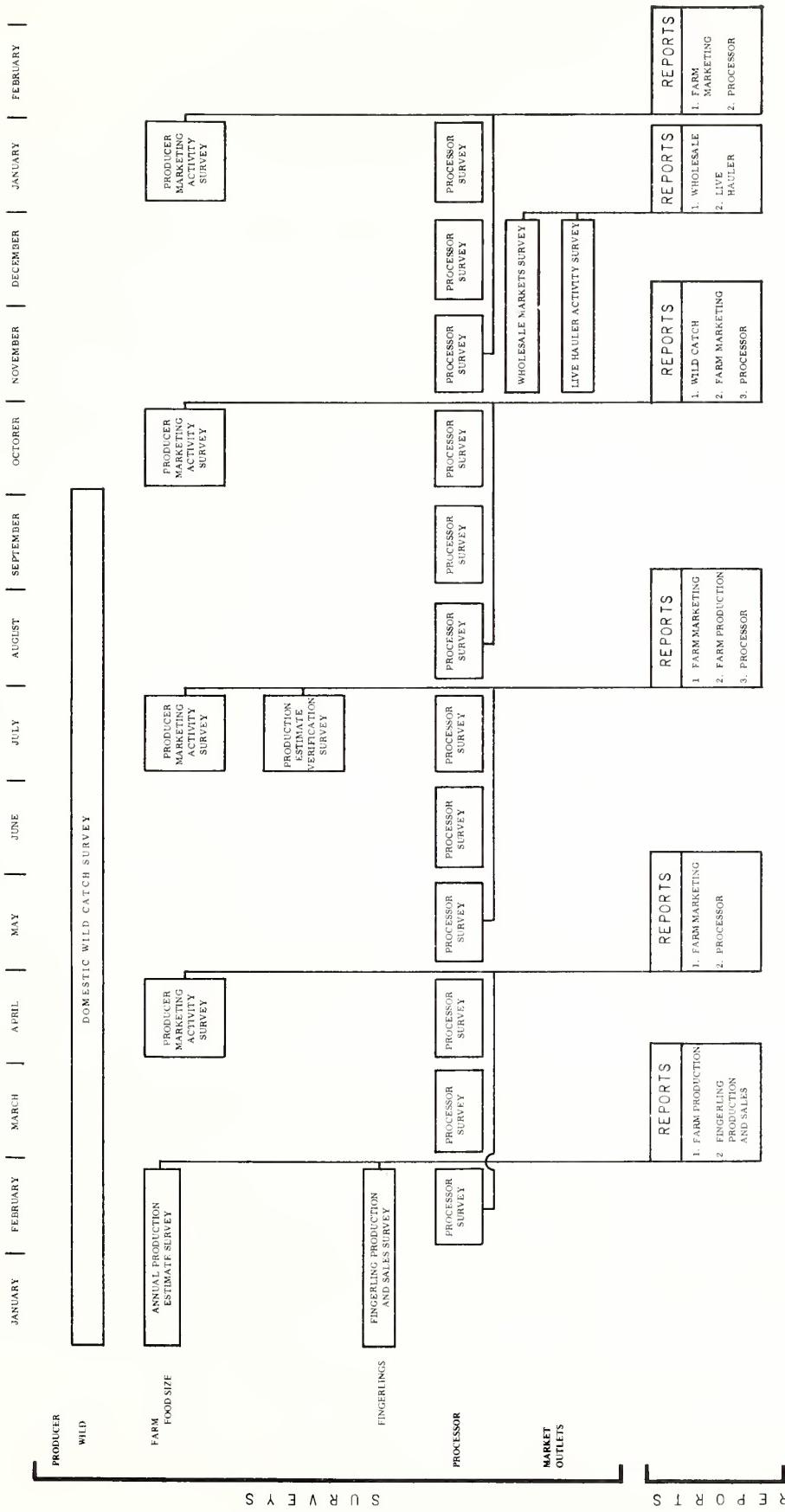
When returned, the questionnaires must be edited for accuracy and completeness, and hand tabulated for in-house analysis and preparation of appropriate reports.

H. Summary

The various segments of the data gathering and reporting system described herein provide extensive coverage of major activities within the catfish industry. The entire program is shown graphically in Figure 2. Some data gathering and/or reporting activity is scheduled for each month of the year; and the public reports are scheduled

FIGURE 2

CATFISH DATA COLLECTION AND REPORTING SCHEMATIC



for release in March, May, August, November, January, and February covering one or more of the industry activity segments. The timeliness of the data, as well as its improved quality and availability, should greatly enhance investment, production and marketing decision-making capability within the industry.

IV. ANALYSIS OF PRODUCTION AND MARKETING SITUATION, 1970

A. Introduction

A series of surveys were begun in late 1970 for the purpose of testing original concepts of the data system described in Part III; and for the purpose of gathering some meaningful data on production (or catch) and marketing of catfish of all types (i.e., volume of catfish production, stocking and harvesting frequencies, processor activities, market disposition of catfish, etc.)

The farm producer survey included producers in all 48 states. The survey of processors was limited to known operations in the Southern United States, while the survey of live haulers and wholesale fish dealers encompassed the Southern and North Central United States, as indicated in Figure 3. Future surveys may not be limited to these states (indeed, the recommended system was designed with the probability that future needs will require inclusion of other states), but the selected area of coverage was based on an awareness that most catfish production and marketing activity is at the present time confined primarily to these areas.

Certain types of data from farm producers in the State of Mississippi are missing. In such instances, appropriate notations are furnished. Such data as was available was taken from a survey conducted by the U. S. Department of Agriculture, Statistical Reporting Service in 1970, which did not seek answers to all questions of interest to this study. However, to have conducted another survey of Mississippi producers would have duplicated much of that agency's work, and would have been unduly bothersome to responding producers.

The chart "Disposition of Farm-Cultured, Domestic Wild, and Imported Catfish," presented as Figure 4, broadly summarizes results of the surveys, tracing movement of catfish from the three sources to domestic markets through the retail level.

B. The Farm Catfish Industry

1. Commercial Farm Production

Commercial farm production of catfish has undergone significant growth since its meager beginning only about 10 years ago. Acreages nearly doubled during some of the intervening years; and in 1970 more than 50 thousand acres of surface water was in commercial catfish production. There were approximately 16 hundred commercial producers who had more than 40 thousand acres in foodsize catfish production. Table 1 shows number of producers and acreages by state and for various regions. (Appendix C contains density maps for individual states.)

FIGURE 3

MARKET AREA FOR SURVEY OF WHOLESALE FISH DEALERS AND LIVE FISH HAULERS, 1970

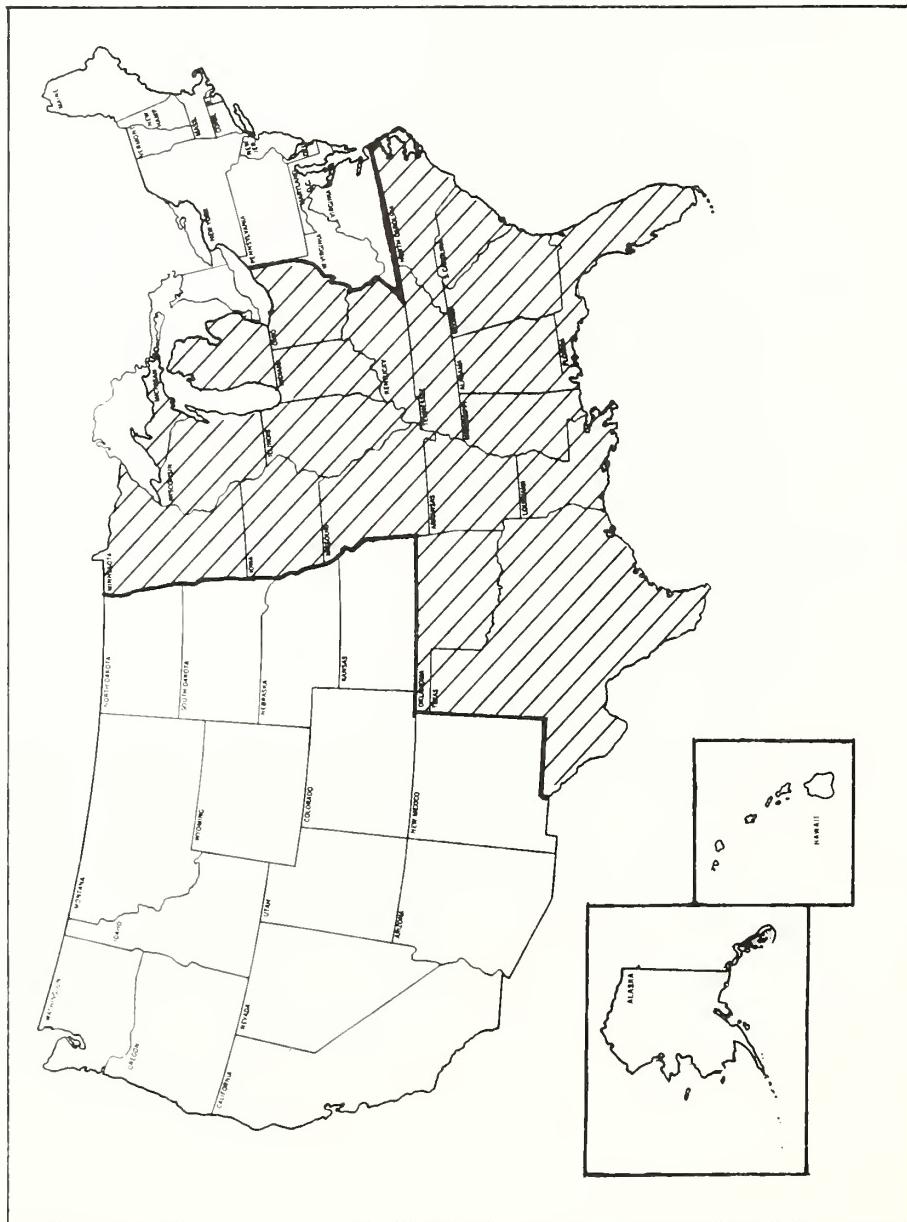


FIGURE 4

DISPOSITION OF FARM-CULTURED, DOMESTIC WILD, AND IMPORTED CATFISH, 1970
(In Thousands of Pounds, Dressed Weight Equivalent)

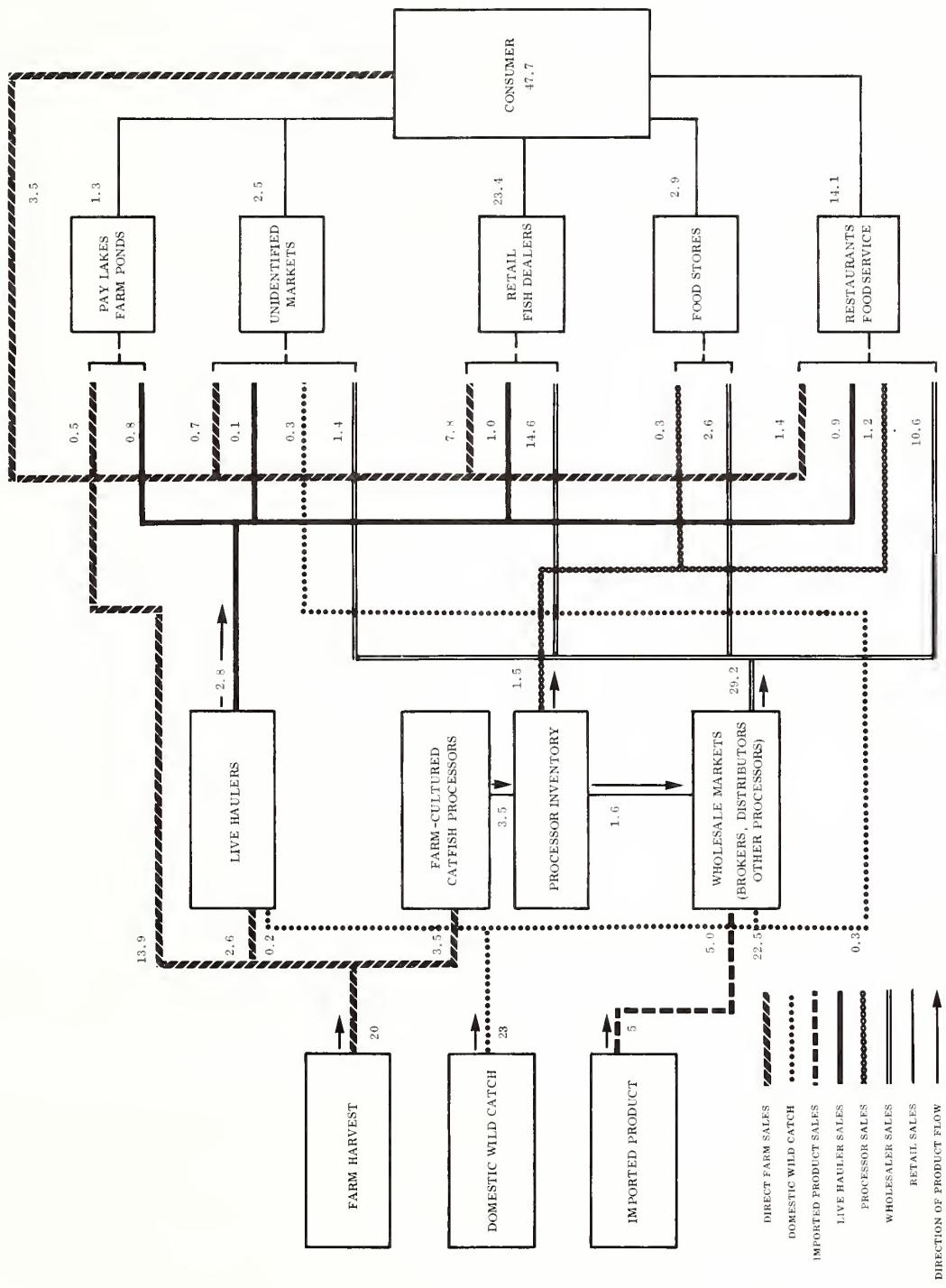


TABLE 1

NUMBER OF COMMERCIAL PRODUCERS AND ACRES OF
SURFACE WATER IN CATFISH PRODUCTION,
AND AVERAGE SIZE OF UNIT,
BY AREAS, 1970 1/

Areas and regions	Number of producers	Acres of surface water in production	Average size of unit
<u>Delta</u>			
Mississippi	264	13,827	52.4
Arkansas	247	10,300	41.7
Louisiana	<u>111</u>	<u>3,042</u>	<u>27.4</u>
Total	622	27,169	40.5
<u>Southeast</u>			
Alabama	362	3,439	9.5
Georgia	211	1,975	9.4
Tennessee	64	613	9.6
South Carolina	<u>21</u>	<u>210</u>	<u>10.0</u>
Total	658	6,237	9.5
<u>Other States</u>			
Texas	168	3,916	23.3
California	25	601	24.0
Missouri	54	729	13.5
Kansas	22	297	13.5
Oklahoma	43	688	16.0
Others	<u>50</u>	<u>769</u>	<u>15.4</u>
Total	362	7,000	19.3
<u>United States</u>	1,642	40,406	24.6

1/ The percentages of the sample that were classified as non-producers, no longer in business, and producers who had changed size categories were calculated. These statistics were applied to the universe data collected in the initial survey to give corrected universe values.

Commercial production of catfish in the United States is primarily a southern enterprise with heaviest concentration of production being in the Mississippi River Delta Region. The Delta Region had 622 producers and 27,169 acres of surface water in 1970, the Southeastern Region had 658 producers and 6,237 acres of water, and the "Other States" had 362 producers and 7,000 acres of surface water in the commercial production of foodfish.

The size of individual producing units varied from one acre or less to more than one thousand, with the average around 25 acres. The units in the Southeast were small, averaging less than 10 acres in size. The Delta had the largest units, averaging more than 40 acres.

Catfish fingerling production followed the concentration patterns of foodsize catfish. Approximately three-fifths of the 568 fingerling producers (58.9 percent) were located in the Delta. Farmers estimated they had 10,396 acres of surface water in fingerling production. They also estimated they had 191,560 pairs of broodfish. This averages only 18.4 pairs of broodfish per acre. Estimates by farmers as to the number of fingerlings produced per pair of broodfish ranged from a low of 1,232 for Georgia producers to a high of 10,013 for South Carolina producers and average approximately 3,317. Farmers estimated they produced more than 480 million fingerlings in 1970. This appears to be an extremely large number of fingerlings, but it must be remembered that the industry is new and farmers have had very little experience in estimating fingerling production. Total fingerling production estimated for the Mississippi River Delta Region was about 351 million; for the Southeast Region, 43 million; and "Other States," around 88 million. (See Table 2.)

In addition to raising foodfish in reservoirs, farmers are beginning to produce foodsize catfish in cages and raceways. In 1970, around 125 farmers had approximately 1,940 cages, with an estimated capacity of around 55,700 cubic feet. The cage method of producing catfish was more concentrated in "Other States" than in the Delta or the Southeast. "Other States" had 1,059 cages, and the Delta and Southeast had only 474 and 404 cages, respectively.

Approximately 70 farmers were producing catfish in raceways in 1970. They had 350 raceways with more than 5,500 linear feet and approximately 15 million cubic feet of water. The Southeast Region had the largest number of raceways (207) followed by "Other States" with 140.

2. Harvest of Farm Production

Commercial catfish producers harvested 19,842 acres of foodfish in 1970 which yielded 34,086,695 pounds of live fish for an average of 1,723 pounds per acre. The Delta States harvested 13,292 surface water acres, the Southeast States 3,002 acres and "Other States" 3,548 acres, with yield of 24,884,910 pounds, 4,194,059 pounds and 5,007,725 pounds, respectively. (See Table 3.) In addition, 244,707 pounds of

TABLE 2

NUMBER OF FINGERLING PRODUCERS, ACRES OF SURFACE WATER
IN PRODUCTION, PAIRS OF BROODFISH AND NUMBER OF
FINGERLINGS PRODUCED, 1970

Areas & regions	No. of producers	Acres in water	Pairs of broodfish	Fingerlings per pair	No. of fingerlings produced
<u>Delta</u>					
Mississippi	159	4,809	101,800	1,817*	185,053,000*
Arkansas	134	2,732	37,852	3,016	114,191,104
Louisiana	41	684	16,060	3,235	51,962,208
Total	334	8,225	155,712	2,249	351,206,312
<u>Southeast</u>					
Alabama	63	679	13,325	2,409	32,105,360
Georgia	49	295	5,493	1,232	6,766,666
Tennessee	14	79	1,051	2,828	2,973,073
South Carolina	2	14	107	10,013	1,071,428
Total	128	1,067	19,976	2,148	42,916,527
<u>Other States</u>					
Texas	51	402	6,645	5,512	36,631,456
California	9	200	3,135	9,120	28,593,904
Missouri	22	268	2,622	3,433	9,001,629
Kansas	4	101	1,950	3,775	7,362,194
Oklahoma	12	72	749	5,280	3,955,032
Others	8	61	771	3,999	3,083,307
Total	106	1,104	15,872	5,584	88,627,522
<u>United States</u>	568	10,396	191,560	2,520	482,750,361

*Mississippi data are for fingerlings harvested rather than fingerlings produced.

TABLE 3

NUMBER OF ACRES HARVESTED AND NUMBER OF FISH
AND POUNDS PER ACRE, BY AREAS, 1970

Areas and regions	Acres harvested	No. of fish per acre	Pounds of fish per acre	Total pounds
<u>Delta</u>				
Mississippi	6,845	1,476	2,008	13,744,000
Arkansas	5,117	1,137	1,640	8,391,951
Louisiana	<u>1,330</u>	<u>1,596</u>	<u>2,067</u>	<u>2,748,959</u>
Total	<u>13,292</u>	<u>1,358</u>	<u>1,872</u>	<u>24,884,910</u>
<u>Southeast</u>				
Alabama	1,880	1,329	1,242	2,334,960
Georgia	592	1,830	1,644	980,352
Tennessee	507	1,380	1,642	832,494
South Carolina	<u>23</u>	<u>1,331</u>	<u>2,011</u>	<u>46,253</u>
Total	<u>3,002</u>	<u>1,436</u>	<u>1,430</u>	<u>4,194,059</u>
<u>Other States</u>				
Texas	2,053	1,083	1,602	3,289,060
California	374	1,566	1,665	622,710
Missouri	279	743	849	236,871
Kansas	227	1,142	1,096	248,792
Oklahoma	194	731	1,247	241,918
Others	<u>421</u>	<u>830</u>	<u>875</u>	<u>368,375</u>
Other States	<u>3,548</u>	<u>1,125</u>	<u>1,496</u>	<u>5,007,726</u>
<u>United States</u>	<u>19,842</u>	<u>1,317</u>	<u>1,718</u>	<u>34,086,695</u>

foodfish were harvested from cages and raceways in 1970. The Delta accounted for 129,260 pounds, the Southeast for 67,625 pounds, and "Other States" for 47,822 pounds.

The average number of fish harvested per acre of surface water varied from 731 for Oklahoma producers to 1,830 for Georgia producers. The pounds of fish per acre harvested ranged from a low of 849 in Missouri to a high of 2,067 in Louisiana. The size of fish harvested varied by type of producers. The average size of fish harvested from raceways was 0.7 pounds, from cages 1.0 pounds, and from reservoirs 1.3 pounds.

3. Farm Producer Inventory

Commercial catfish farmers reported harvesting about one-half (49.1 percent) of the 40,406 acres they had in foodfish production in 1970. This is a small harvest in comparison to other reports. Fred P. Meyers and others¹ reported that in 1969 Arkansas farmers harvested 10,419 acres of channel and blue catfish out of an approximately 10,600 acres devoted exclusively to foodsize fish production.

The market prices for catfish were low in the last part of 1970, and many people believed that farmers carried a large part of their 1970 production over into the 1971 marketing year for this reason. It appears that farmers in the three regions followed similar patterns, with harvested acreage in each case representing about half of their total.

Of the 772 farmers who reported on method of harvesting, 65 percent stated they harvested the fish themselves, 11 percent had the processor harvest the fish, 3 percent used custom harvesting, and 21 percent used other methods. (See Table 4.)

On January 1, 1971, fish farmers indicated they had inventories of more than 30,000 acres in foodsize catfish. They further estimated that in 21,900 acres, the fish would average weighing one pound or more. When the January 1, 1971, inventory of acres of production of fish averaging one pound or more (21,909) is added to the acreage harvested in 1970 (19,842), it approximates the acres produced in 1970 (40,406) and validates the small harvest in 1970. (See Table 5.)

¹Fred P. Meyers, Don S. Godwin, Randy Boyd, J. Mayo Martin, D. Leroy Gray and William P. Mathis, "Fish Production in Arkansas During 1969 as Compared to Other States," a paper prepared for presentation at the Twenty-Fourth Annual Conference of the Southern Association of Game and Fish Commissioners, Atlanta, Georgia, September 28-30, 1970.

TABLE 4

METHODS OF HARVESTING FOODFISH, BY REGIONS, 1970
 (Number of Farmers)

<u>Region</u>	<u>Type of Harvest</u>			
	<u>Custom</u>	<u>Owner</u>	<u>Processor</u>	<u>Others</u>
Delta	0	223	2	9
Southeast	23	125	80	115
Other	2	157	1	35
Total	25	505	83	159

Fingerling producers, excluding Mississippi, indicated they had 4,453 acres of surface water in fingerling production on January 1, 1971, with an estimated 137 million fingerlings and 102 thousand pairs of broodfish. (See Table 6.)

4. Production Intention

Fish farmers, excluding Mississippi,² indicated that they planned to stock around 19,759 acres of surface water to foodfish production in 1971. More than 70 percent of these areas apparently will be stocked during the first half of the year, with April and May accounting for 42 percent of the total stocking. Around 12 percent of the acreage is expected to be stocked over a period of several months, mainly by farmers who sell locally to individuals and restock as they harvest. (See Table 7.)

The number of fingerlings to be stocked per acre ranged from less than 1,000 to over 5,000. The most common stocking rate (62 percent of the acreage) was between 1,500 and 2,500 fingerlings per acre.

Farmers in the Southeast indicated a heavier stocking rate than did farmers in the other regions. Around 12 percent of the acres were to be stocked at the rate of 3,000 or more fingerlings per acre; this compares to five percent for the Delta and only two percent for the "Other States." Regarding lower density stocking, only nine percent of the acreage in the Southeast was to be stocked with less than 1,500 fingerlings per acre, while more than 25 percent of the acres to be stocked in the other two regions were at this rate, as indicated in Table 8. (See Appendix D for individual state data.)

²Data on farmers intentions for 1971 were not obtained in the Mississippi survey.

TABLE 5
NUMBER OF ACRES OF SURFACE WATER IN FOODFISH PRODUCTION AND ACRES HARVESTED
IN 1970, AND ACRES IN PRODUCTION JANUARY 1, 1971, BY AREA

Areas and region	Acres in production in 1970	Acres harvested in 1970	Acres in production		January 1 harvest in 1971		Harvested acres plus 1 pound inventory	
			Less than 1 lb. harvest in 1971		Over 1 lb. harvest in 1971		Yes	No
			Yes	No	Yes	No		
<u>Delta</u>								
Mississippi	13,827	6,845	0	368	6,982	0	13,827	
Arkansas	10,300	5,117	1,791	17	6,811	146	12,074	
Louisiana	<u>3,042</u>	<u>1,330</u>	<u>958</u>	<u>39</u>	<u>1,611</u>	<u>5</u>	<u>2,946</u>	
Total	27,169	15,292	2,749	424	15,404	151	28,847	
<u>Southeast</u>								
Alabama	3,439	1,880	842	69	1,765	36	3,681	
Georgia	1,975	592	611	8	1,046	200	1,838	
Tennessee	613	507	206	6	145	10	662	
South Carolina	<u>210</u>	<u>23</u>	<u>155</u>	<u>0</u>	<u>82</u>	<u>0</u>	<u>105</u>	
Total	6,237	3,002	1,814	83	3,038	246	6,286	
<u>Other States</u>								
Texas	3,916	2,053	1,820	2	1,818	72	3,943	
California	601	374	314	2	231	0	605	
Missouri	729	279	308	138	324	26	629	
Kansas	297	227	38	7	159	0	386	
Oklahoma	688	194	464	0	184	82	460	
Others	<u>769</u>	<u>421</u>	<u>347</u>	<u>8</u>	<u>172</u>	<u>8</u>	<u>601</u>	
Total	7,000	3,548	3,291	157	2,888	182	6,624	
United States	40,406	19,842	7,854	664	21,330	579	41,751	

TABLE 6

NUMBER OF ACRES OF SURFACE WATER
IN FINGERLING PRODUCTION, PAIRS OF BROODFISH
AND FINGERLINGS, JANUARY 1, 1971

Areas and regions	Acres in production	Pairs of broodfish	Number of fingerlings
<u>Delta*</u>			
Arkansas	2,184	45,145	76,133,584
Louisiana	617	14,172	14,246,615
Total	<u>2,801</u>	<u>59,317</u>	<u>90,380,199</u>
<u>Southeast</u>			
Alabama	528	14,356	15,598,562
Georgia	93	6,264	3,730,411
Tennessee	78	891	1,883,372
South Carolina	8	64	642,856
Total	<u>707</u>	<u>21,575</u>	<u>21,855,201</u>
<u>Other States</u>			
Texas	287	9,523	10,810,464
California	201	4,702	4,428,654
Missouri	259	2,884	6,886,588
Kansas	90	2,037	921,228
Oklahoma	46	1,510	848,905
Others	62	917	1,021,199
Total	<u>945</u>	<u>21,582</u>	<u>24,917,038</u>
<u>United States</u>	4,453	102,474	137,152,438

* Mississippi data not available.

TABLE 7

NUMBER OF ACRES OF SURFACE WATER FARMERS INTEND TO STOCK
TO FOODFISH PRODUCTION IN 1971, BY MONTHS AND REGIONS

Stocking month	Delta*	Regions			Total
		Southeast	Other states	-acres-	
January	1,191	189	161		1,541
February	359	279	106		744
March	807	792	200		1,799
April	3,105	1,145	987		5,237
May	1,482	422	1,263		3,167
June	658	530	294		1,482
July	123	197	54		374
August	286	121	90		497
September	0	95	136		231
October	501	210	193		904
November	830	24	402		1,256
December	33	52	35		120
Other	<u>1,059</u>	<u>464</u>	<u>888</u>		<u>2,411</u>
Total*	10,434	4,520	4,809		19,763

* Mississippi data not available.

TABLE 8

NUMBER OF FINGERLINGS PRODUCERS PLAN TO STOCK PER ACRE, 1971, BY REGIONS

Region and month	Number of fingerlings stocked per acre in thousands							Total
	<1	1<1.5	1.5<2	2<2.5	2.5<3	3<3.5	3.5<5	
Delta*								
January	0	159	629	300	0	103	0	0
February	0	0	211	24	0	0	124	0
March	181	16	163	395	0	5	0	359
April	187	579	1,230	1,040	3	22	37	807
May	163	402	296	419	0	202	0	3,105
June	189	0	66	335	68	0	0	1,482
July	0	0	49	74	0	0	0	658
August	0	91	10	185	0	0	0	123
September	0	0	0	0	0	0	0	286
October	0	330	79	59	33	0	0	0
November	0	0	385	445	0	0	0	830
December	0	0	33	0	0	0	0	33
Other	0	361	555	143	0	0	0	1,059
Total	720	1,938	3,706	3,419	104	332	161	10,434
Southeast**								
January	0	4	64	121	0	0	0	189
February	0	77	4	150	32	0	0	16
March	0	46	348	309	89	0	0	279
April	2	104	140	419	192	22	2	792
May	0	20	22	312	0	44	0	1,145
June	76	0	0	420	8	26	0	422
July	0	0	0	61	136	0	0	530
August	0	0	0	71	18	32	0	197
September	0	0	0	68	23	0	4	121
October	15	32	0	108	0	55	0	95
November	0	24	0	0	0	0	0	210
December	0	0	0	16	0	36	0	24
Other	0	0	0	188	276	0	0	52
Total	93	307	578	2,243	774	215	6	4,520

* Delta Region includes Arkansas, Louisiana and Mississippi, but Mississippi data not included.

** Southeast includes Alabama, Georgia, Tennessee and South Carolina.

TABLE 8

NUMBER OF FINGERLINGS PRODUCERS PLAN TO STOCK PER ACRE, 1971, BY REGIONS (Continued)

Region and month	Number of fingerlings stocked per acre in thousands							Total
	<1	1<1.5	1.5<2	2<2.5	2.5<3	3<3.5	3.5<5	
<u>Other States***</u>								
January	0	44	0	112	5	0	0	0
February	0	0	12	35	15	3	0	41
March	4	160	0	24	0	3	0	9
April	73	172	57	533	143	8	0	1
May	144	168	337	456	127	31	0	1,263
June	2	89	88	47	68	0	0	294
July	13	6	0	15	0	0	0	54
August	0	0	24	0	66	0	0	90
September	0	103	18	0	15	0	0	136
October	0	2	7	184	0	0	0	193
November	0	18	381	3	0	0	0	402
December	0	0	0	35	0	0	0	35
Other	0	237	370	0	281	0	0	888
Total	236	999	1,294	1,444	720	45	0	4,809
<u>United States</u>								
January	0	207	693	533	5	103	0	1,541
February	0	77	227	209	47	3	124	57
March	185	222	511	728	89	8	0	1,799
April	262	855	1,427	1,992	338	52	39	272
May	307	590	655	1,187	127	277	0	5,237
June	267	89	154	802	144	26	0	3,167
July	13	6	49	150	136	0	20	1,482
August	0	91	34	256	84	32	0	374
September	0	103	18	68	38	0	4	497
October	15	364	86	351	33	55	0	231
November	0	42	766	448	0	0	0	904
December	0	0	33	51	0	36	0	1,256
Other	0	598	925	331	557	0	0	120
Total	1,049	3,244	5,578	7,106	1,598	592	167	2,411
							429	19,765

*** All states not included in the Delta and Southeast Regions.

The sizes of fingerlings which producers planned to stock varied from less than three inches to more than nine inches in length. Farmers in the "Other States" and Delta Region indicated a tendency to stock larger fingerlings than did farmers in the Southeast. Approximately half the acres in the first two regions were apparently stocked with fingerlings nine inches or more in length, with only 10 percent of the acres in the Southeast to be stocked with large fingerlings. (See Table 9 and Appendix D.)

Fingerling producers reported their inventory on farms January 1, 1971, at more than 137 million fingerlings. Foodfish producers indicated they planned to stock approximately 20 thousand acres to catfish production during the year. Stocking at the rate of two thousand fingerlings per acre would require around 40 million fingerlings, leaving more than 90 million to take care of the high mortality during the harvesting and stocking periods, and allow for expansion in the industry.

Size of the fingerlings on farms January 1 was not obtained for this study. Certain people connected with the catfish industry believe that producers are becoming interested in stocking larger fingerlings; therefore, the recommended statistical reporting system will report fingerling inventories by two size groups —under six inches, and six inches and over.

A large majority, 71 percent of the 1,378 fish farmers reporting, purchased their fingerlings; 24 percent raised their fingerlings; and the other five percent raised some and purchased the rest.

Fish farmers expected to harvest during 1971 around 40 percent of the acres they planned to stock that year. This 7,767, plus the 29,184 acres carried over from their 1970 production that they indicated would be harvested in 1971, amounts to an estimated harvest of 36,951 acres. This acreage for harvest in 1971 includes Mississippi's carryover acres from the 1970 production, but does not include the acres Mississippi farmers planned to stock and harvest during 1971. This is an increase of more than 85 percent over the 1970 harvest without considering Mississippi producer intentions. This estimated increase in the number of acres to be harvested in 1971 tends to be supported by the fact that processors purchased more fish during the first six months of 1971 than they did during all of 1970.³

When fish farmers estimated the number of acres of surface water they planned to stock to foodfish production by months for 1971, they also estimated the month they expected the fish would be ready for harvest. This data on stocking and harvesting months is shown in Table 10 for the three regions and for individual states in Appendix D. Fish stocked the first three months of the year were expected to be harvested during the latter part of the year. Fish stocked after May generally would not be ready for harvest until the following year. This varies by states, with the southern states having the longest growing period.

³Production-Inventory-Sales Data, Marketing Office, National Marine Fisheries Service, Little Rock, Arkansas.

TABLE 9
SIZE OF FINGERLINGS PRODUCERS PLAN TO STOCK PER ACRE, BY MONTH AND REGIONS, 1971

Stocking month	Under 1" <3"	3" <4"	4" <5"	5" <6"	6" <7"	7" <8"	8" <9"	9" & over	Total
	acres in size groups								
Delta*									
January	187	240	31	173	159	0	153	248	1,191
February	0	0	124	0	45	0	190	359	
March	0	27	14	11	154	47	135	419	807
April	63	24	212	706	551	575	35	939	3,105
May	0	0	69	36	624	416	88	249	1,482
June	0	0	0	553	39	16	0	50	658
July	12	0	0	0	62	0	0	49	123
August	0	0	11	0	110	0	0	165	286
September	0	0	0	0	0	0	0	0	0
October	20	0	0	5	205	0	0	271	501
November	0	0	0	405	389	0	36	0	830
December	0	0	0	0	0	0	0	33	33
Others	0	0	0	200	0	389	152	318	1,059
Total	282	291	461	2,089	2,293	1,488	599	2,931	10,434
Southeast**									
January	0	0	30	153	0	4	0	2	189
February	0	67	192	20	0	0	0	0	279
March	0	3	422	210	105	52	0	0	792
April	0	18	146	530	145	50	248	8	1,145
May	132	77	130	25	13	0	0	45	422
June	16	402	76	36	0	0	0	0	530
July	0	36	0	161	0	0	0	0	197
August	4	8	95	14	0	0	0	0	121
September	0	12	23	56	0	0	0	4	95
October	0	65	88	55	0	2	0	0	210
November	0	0	0	0	0	24	0	0	24
December	16	36	0	0	0	0	0	0	52
Others	0	0	280	184	0	0	0	0	464
Total	168	724	1,482	1,444	263	132	248	59	4,520

*Delta Region includes Arkansas, Louisiana and Mississippi, but Mississippi data not included.

** Southeast includes Alabama, Georgia, Tennessee and South Carolina.

TABLE 9
SIZE OF FINGERLINGS PRODUCERS PLAN TO STOCK PER ACRE, BY MONTH AND REGIONS, 1971 (Continued)

Stocking month	Under 1" <3"	3" <4"	4" <5"	5" <6"	6" <7"	7" <8"	8" <9"	9" & over	Total
Other States***	acres in size groups - - - - -								
January	0	0	0	10	35	0	111	5	161
February	0	0	0	56	10	0	0	40	106
March	25	6	0	4	5	59	41	60	200
April	2	162	45	173	200	217	18	170	987
May	30	3	98	195	209	166	278	284	1,263
June	41	2	34	0	8	142	32	35	294
July	20	19	0	0	0	0	15	0	54
August	0	53	15	22	0	0	0	0	90
September	103	0	0	0	15	0	0	18	136
October	0	0	174	17	2	0	0	0	193
November	0	12	0	387	0	3	0	0	402
December	0	0	35	0	0	0	0	0	35
Others	0	0	0	0	0	651	237	0	888
Total	221	257	401	864	484	1,238	732	612	4,809
<u>United States</u>									
January	187	240	61	336	194	4	264	255	1,541
February	0	67	316	76	10	45	0	230	744
March	25	36	436	225	264	158	176	479	1,799
April	65	204	403	1,409	896	842	301	1,117	5,237
May	162	80	297	256	846	582	366	578	3,167
June	57	404	110	589	47	158	32	85	1,482
July	32	55	0	161	62	0	15	49	374
August	4	61	121	56	110	0	0	165	497
September	105	12	25	56	15	0	0	22	231
October	20	65	262	77	207	2	0	271	904
November	0	12	0	792	389	27	36	0	1,256
December	16	36	35	0	0	0	0	33	120
Others	0	0	280	384	0	1,040	389	318	2,411
Total	671	1,272	2,544	4,397	3,040	2,658	1,579	5,602	19,763

*** All states not included in the Delta and Southeast Regions.

TABLE 10
STOCKING AND HARVESTING DATES BY REGIONS, DELTA*

Harvest month	Month of stocking											Other
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	
<i>1971</i>												
January	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0
June	104	0	0	0	0	0	0	0	0	0	0	0
July	0	0	99	0	0	0	0	0	0	0	0	0
August	96	0	0	79	0	0	0	0	0	0	0	0
September	168	0	0	283	274	0	0	0	0	0	0	0
October	226	193	12	462	104	46	0	0	0	0	0	0
November	48	0	65	296	56	0	0	0	0	0	0	0
December	320	0	20	856	63	0	0	0	0	0	0	0
Total	<u>1,062</u>	<u>-193</u>	<u>196</u>	<u>1,976</u>	<u>497</u>	<u>46</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<i>1972</i>												
January	0	0	8	0	0	0	0	0	0	0	0	0
February	0	0	0	503	109	75	0	0	0	0	0	0
March	0	0	0	0	190	0	0	0	0	0	0	0
April	0	28	0	46	0	0	0	0	0	0	0	0
May	157	24	0	0	268	243	0	0	0	0	0	0
June	72	0	93	124	48	209	0	0	0	0	41	0
July	0	0	0	135	33	0	51	91	0	0	0	0
August	0	0	0	0	0	0	0	30	0	170	0	0
September	0	0	0	0	19	0	0	0	0	40	50	0
October	0	0	0	0	0	0	0	0	0	0	12	0
November	0	0	0	0	0	0	0	0	0	132	185	0
December	0	114	0	141	0	66	0	0	0	124	542	0
Total	<u>224</u>	<u>166</u>	<u>101</u>	<u>949</u>	<u>667</u>	<u>593</u>	<u>51</u>	<u>121</u>	<u>0</u>	<u>466</u>	<u>830</u>	<u>0</u>
Others	0	0	510	180	318	19	72	165	0	35	0	33
TOTAL	<u>1,191</u>	<u>359</u>	<u>807</u>	<u>3,105</u>	<u>1,482</u>	<u>658</u>	<u>123</u>	<u>286</u>	<u>0</u>	<u>501</u>	<u>830</u>	<u>33</u>
												<u>1,059</u>

* Delta includes Arkansas, Louisiana and Mississippi, but Mississippi data not included.

TABLE 10

STOCKING AND HARVESTING DATES BY REGIONS (continued) SOUTHEAST**

Harvest month	Jan.			Feb.			Mar.			Apr.			May			June			July			Month of stocking			acres			Aug.			Sept.			Oct.			Nov.			Dec.		
	January	February	March	April	May	June	July	August	September	October	November	December	Total	1971	183	257	719	944	143	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
January	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
February	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
March	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
April	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
June	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
July	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
August	0	0	0	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
September	6	0	70	123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
October	131	83	417	330	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	460	0						
November	52	150	213	465	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
December	0	24	19	4	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
Total	189	279	792	1,145	422	530	197	121	95	210	24	52	464																													
1972																																										
January	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
February	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
March	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
April	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
June	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
July	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
August	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
September	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
October	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
November	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
December	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
Total	0	0	66	201	279	530	172	121	95	210	24	52	0																													
Others	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
TOTAL	189	279	792	1,145	422	530	197	121	95	210	24	52	464																													

**

Southeast includes Alabama, Georgia, Tennessee and South Carolina.

TABLE 10
STOCKING AND HARVESTING DATES BY REGIONS (continued) OTHER STATES***

Harvest month	Month of stocking											Other
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	
1971												
January	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	4	0	0	0	0	0	0	0	0	0
August	0	16	0	0	0	0	0	0	0	0	0	0
September	0	0	33	25	0	0	0	0	0	0	0	0
October	0	35	88	133	221	20	0	0	0	0	0	0
November	109	35	10	201	412	0	0	0	0	0	0	0
December	8	4	10	191	72	0	0	0	0	0	0	0
Total	117	90	145	550	705	22	0	0	0	0	0	0
1972												
January	0	8	0	143	22	16	0	0	0	0	0	0
February	0	8	55	58	16	16	0	0	0	0	0	0
March	0	0	0	138	83	37	0	0	0	0	0	0
April	0	0	0	0	21	0	0	0	0	0	0	0
May	0	0	0	0	348	89	0	0	0	0	0	0
June	0	0	0	45	35	13	0	0	0	0	0	0
July	0	0	0	0	38	0	15	0	0	0	0	0
August	0	0	0	0	0	15	51	0	110	4	0	0
September	0	0	39	0	0	0	0	18	0	0	0	0
October	0	0	45	0	26	24	0	66	0	0	0	0
November	44	0	0	0	23	0	0	17	22	0	0	0
December	0	0	0	10	0	0	0	103	0	0	35	0
Total	44	16	55	433	558	54	90	121	193	22	35	0
Others	0	0	0	4	0	41	0	15	0	376	0	888
TOTAL	161	106	200	987	1,263	294	54	90	136	193	402	35
												888

*** Other states includes all others than Delta and Southeast.

TABLE 10

STOCKING AND HARVESTING DATES, BY REGIONS (continued) UNITED STATES

Harvest month	Month of stocking											Other
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	
1971												
January	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0
June	104	0	0	0	0	0	0	0	0	0	0	0
July	0	0	110	0	0	0	0	0	0	0	0	0
August	96	16	0	101	0	0	0	0	0	0	0	0
September	174	0	103	431	274	0	0	0	0	0	0	460
October	357	311	517	925	380	66	0	0	0	0	0	0
November	209	185	288	962	533	0	0	0	0	0	0	0
December	328	28	49	1,051	158	2	0	0	0	0	0	0
Total	1,268	540	1,067	3,470	1,345	68	0	0	0	0	0	460
1972												
January	0	8	8	143	22	16	39	0	0	0	0	0
February	0	8	55	561	125	91	0	0	0	0	0	0
March	0	0	0	138	370	37	0	0	0	0	0	0
April	0	28	0	174	21	0	50	0	0	0	0	0
May	157	24	0	0	616	350	0	0	0	0	0	0
June	72	0	93	124	93	704	13	0	0	0	41	0
July	0	0	0	135	33	60	134	136	0	0	0	0
August	0	0	0	0	0	0	15	135	0	280	4	0
September	0	0	33	39	19	0	0	33	103	40	50	0
October	0	0	0	45	182	0	26	24	0	81	36	52
November	44	0	0	73	23	30	0	4	0	344	207	0
December	0	114	33	151	0	66	0	0	113	124	542	35
Total	273	182	222	1,583	1,504	1,354	277	332	216	869	880	87
Others	0	22	510	184	318	60	97	165	15	35	376	53
TOTAL	1,541	744	1,799	5,237	3,167	1,482	374	497	231	904	1,256	120
												2,411

5. Marketing of Farm-Cultured Catfish

Marketing of farm-cultured catfish, as recently as 1965, was confined almost entirely to farm sales. The market at that time was limited primarily to pay lakes, fee fishing ponds, direct sales to consumers, and sales to local seafood outlets and restaurants. Direct consumer sales at the farm site were believed by many to have virtually disappeared, due to the fact that production of catfish has become more specialized and standardized, tending to make the maintenance of direct sales facilities a nuisance. The recent survey did not show this to be true. Similarly, sales by farm producers to live haulers, farm ponds, and directly to pay lakes were believed by some to account for a larger proportion of total harvest than was actually the case.

Nevertheless, live sales continue to be of some significance for farm-cultured catfish, having taken nearly 15 percent of the total 1970 harvest. (See Table 11.) In many instances the farm producer is in business specifically to serve the live market, and only resorts to processors and other outlets as less profitable alternatives (though they are not always the least profitable). There are also instances of some forward integration toward live markets via ownership by farm producers of their own hauling rigs.

Thus, the sale of live fish directly to live haulers, farm ponds and pay lakes is still a factor in the overall farm-cultured catfish market picture. However, the importance of this market varies considerably between geographic regions.

Although live markets apparently continue to expand (grow in quantity of demand) each year, there is a widely held conviction that this cannot continue indefinitely. There is growing concern and increasing interest in achieving successful growth in processed catfish markets. Sales through farm-raised catfish processing plants, a relatively minor market outlet on an industry-wide basis at this time, appear to offer the most logical route for continued industry growth into mass markets. As acreages devoted to extensive catfish culture continue to grow, and developing technology produces methods and practices enabling greater stocking rates and year-round harvesting, access to these mass markets will become essential for continued growth.

There has been a general decline in the tendency for farm producers to maintain and operate their own processing facilities in the past two or three years. Those who continue to operate such facilities do so primarily to serve local markets. Such producers also tend to rely on independent and cooperative processing firms and live markets to complete their sales.

Farm producers, according to the survey of their 1970 marketing activity, harvested and sold approximately 34 million pounds (liveweight) of foodsize catfish during 1970. This was valued at slightly more than \$13.4 million. (See Tables 11 and 12, and Appendix D.) Producers in the Delta Region, including Arkansas, Louisiana, and Mississippi, were credited with approximately 72 percent of the total poundage, and about 65 percent of the total dollar volume.

TABLE 11

VOLUME OF FOODFISH SALES BY TYPES OF BUYER BY MONTH AND REGIONS, 1970

Month	Processor	Live-hauler	Pay lake	Type of buyer			Total
				Individual	Eating est.	Other	
Delta*							
January	2,037,728	151,404	0	164,766	117,759	0	2,471,657
February	4,547,804	358,224	0	441,703	278,618	0	5,626,349
March	1,555,178	103,905	0	101,623	80,815	436,465	2,277,986
April	292,877	341,461	0	27,049	9,236	80,060	750,683
May	1,247,950	406,265	0	9,195	4,618	0	1,668,028
June	233,796	500,899	96,434	7,147	7,696	0	845,972
July	205,121	460,333	18,142	54,475	6,157	0	744,228
August	240,527	442,624	0	5,003	5,388	0	693,542
September	360,736	436,193	0	458,616	5,388	0	1,260,933
October	1,443,156	298,857	0	755,502	63,882	22,910	2,584,307
November	1,935,157	295,355	0	166,057	104,674	0	2,501,243
December	2,002,006	448,009	158,284	524,784	253,119	299,760	3,685,962
Total	<u>16,102,036</u>	<u>4,243,529</u>	<u>272,860</u>	<u>2,715,920</u>	<u>937,350</u>	<u>839,195</u>	<u>25,110,890</u>
Southeast**							
January	224,019	0	0	0	0	0	224,019
February	442,016	0	0	28,064	0	0	470,080
March	226,482	0	0	0	0	0	226,482
April	60,242	0	6,510	0	0	0	66,752
May	0	0	0	10,647	0	0	10,647
June	0	0	17,148	3,852	0	4,171	25,171
July	120,726	0	32,152	5,503	0	0	158,381
August	132,532	0	23,579	0	11,224	0	167,335
September	188,758	0	0	58,761	22,447	0	269,966
October	433,783	0	0	148,806	7,500	0	600,089
November	883,219	0	0	147,305	7,500	8,317	1,046,341
December	419,498	0	0	482,336	29,461	0	931,295
Total	<u>3,131,275</u>	<u>0</u>	<u>79,389</u>	<u>885,274</u>	<u>78,132</u>	<u>12,488</u>	<u>4,186,558</u>

* Delta includes Arkansas, Louisiana and Mississippi.

** Southeast includes Alabama, Georgia, Tennessee and South Carolina.

TABLE 11

VOLUME OF FOODFISH SALES BY TYPES OF BUYER BY MONTH AND REGIONS, 1970 (continued)

Month	Processor	Live-hauler	Pay-lake	Type of buyer			Total
				Individual	Eating est.	Other	
<i>Other States***</i>							
January	0	0	0	0	0	0	0
February	0	4,550	0	756,468	0	49,483	810,501
March	0	36,818	221,694	5,432	0	0	261,944
April	0	0	0	21,111	0	31,017	52,128
May	26,425	0	13,054	181,217	0	3,153	223,849
June	22,944	0	38,173	43,980	0	12,192	117,289
July	16,615	0	38,173	42,368	0	23,944	121,100
August	21,520	0	47,164	64,389	13,708	12,192	158,973
September	18,355	0	27,986	333,505	36,679	32,673	449,198
October	116,010	0	27,189	222,806	341,860	36,054	743,919
November	308,440	0	22,548	362,431	444,601	0	1,138,020
December	20,887	0	33,512	196,633	524,474	49,482	824,988
Total	551,196	41,368	469,493	2,228,340	1,361,322	250,190	4,901,909
<i>United States</i>							
January	2,261,747	151,404	0	164,766	117,759	0	2,695,676
February	4,989,820	362,774	0	1,226,235	278,618	49,483	6,906,930
March	1,781,660	140,723	221,694	105,055	80,815	436,465	2,766,412
April	353,119	341,461	6,510	48,160	9,236	111,077	869,563
May	1,274,375	406,265	13,054	201,059	4,618	3,153	1,902,524
June	256,740	500,899	151,755	54,979	7,696	16,363	988,432
July	342,462	460,333	88,467	102,346	6,157	23,944	1,023,709
August	394,579	442,624	70,743	69,392	30,320	12,192	1,019,850
September	567,849	436,193	27,986	850,882	64,514	32,673	1,980,097
October	1,992,949	298,857	27,189	1,127,114	413,242	58,964	3,918,315
November	3,126,816	295,355	22,548	675,793	556,775	8,317	4,685,604
December	2,244,391	448,009	191,796	1,203,753	807,054	349,242	5,442,245
Total	19,784,507	4,284,897	821,742	5,829,534	2,376,804	1,101,873	34,199,357

Other States includes all others not included in Delta and Southeast.

TABLE 12

VALUE OF FOODFISH SOLD BY TYPES OF BUYER BY MONTH AND REGIONS, 1970

Month	Processor	Live-hauler	Pay-lake	Type of buyer			Total
				Individual	Eating est.	Other	
<u>Delta*</u>							
January	672,451	52,991	0	74,293	41,216	0	840,951
February	1,457,987	125,378	0	159,013	111,447	0	1,853,825
March	544,312	37,406	0	34,989	31,518	213,868	862,093
April	96,198	48,812	0	12,667	3,694	32,024	193,395
May	392,343	170,512	0	4,243	1,709	0	568,807
June	74,814	205,071	38,582	2,501	2,694	0	323,662
July	67,690	184,133	8,592	59,019	2,463	0	321,897
August	80,991	181,476	0	1,951	2,155	0	266,573
September	119,832	187,561	0	169,897	1,886	0	479,176
October	461,810	118,343	0	370,407	31,941	11,455	995,956
November	628,716	118,142	0	83,132	52,337	0	882,327
December	642,020	177,280	60,566	126,625	185,249	95,923	1,287,663
Total	<u>5,239,164</u>	<u>1,607,105</u>	<u>107,740</u>	<u>1,098,737</u>	<u>468,309</u>	<u>353,270</u>	<u>8,874,325</u>
<u>Southeast**</u>							
January	72,202	0	0	0	0	0	72,202
February	141,446	0	0	16,838	0	0	158,284
March	80,710	0	0	0	0	0	80,710
April	18,073	0	3,255	0	0	0	21,327
May	0	0	0	5,857	0	1,585	7,442
June	0	0	8,574	1,348	0	0	9,922
July	42,254	0	16,076	3,852	0	0	62,182
August	43,736	0	11,790	0	8,419	0	63,945
September	62,290	0	0	32,754	16,835	0	111,879
October	146,448	0	0	68,795	5,625	0	220,869
November	279,798	0	0	71,700	5,625	3,160	360,283
December	144,615	0	0	208,349	15,675	0	368,639
Total	<u>1,031,572</u>	<u>0</u>	<u>39,695</u>	<u>409,493</u>	<u>52,179</u>	<u>4,745</u>	<u>1,537,684</u>

* Delta includes Arkansas, Louisiana and Mississippi.

** Southeast includes Alabama, Georgia, Tennessee and South Carolina.

TABLE 12
VALUE OF FOODFISH SOLD BY TYPES OF BUYER BY MONTH AND REGIONS, 1970

Month	Processor	Live-hauler	Pay-lake	Type of buyer			Other	Total
				Individual	Eating est.	dollars		
Other States***								
January	0	0	0	0	0	0	0	0
February	0	1,593	0	378,243	0	27,216	407,052	
March	0	12,881	77,593	11,928	0	0	102,402	
April	0	0	0	0	0	17,059	17,059	
May	11,891	0	5,222	121,452	0	1,578	140,143	
June	10,325	0	15,269	21,990	0	7,315	54,899	
July	6,646	0	15,269	31,615	0	17,959	71,489	
August	9,038	0	19,422	39,978	8,910	7,926	85,274	
September	7,342	0	14,136	236,779	21,891	17,971	298,119	
October	56,909	0	12,560	143,131	262,162	21,655	496,417	
November	124,487	0	12,401	247,420	354,262	0	738,570	
December	7,728	0	25,134	124,546	416,075	32,164	605,647	
Total	234,366	14,474	197,006	1,357,082	1,063,300	150,843	3,017,071	
United States								
January	744,653	52,991	0	74,293	41,216	0	913,153	
February	1,599,433	126,971	0	554,094	111,447	27,216	2,419,161	
March	625,022	50,287	77,593	46,917	31,518	213,868	1,045,205	
April	114,271	48,812	3,255	12,667	3,694	49,083	231,782	
May	404,234	170,512	5,222	131,552	1,709	3,163	716,392	
June	85,139	205,071	62,425	25,839	2,694	7,315	388,483	
July	116,590	184,133	39,937	94,486	2,463	17,959	455,568	
August	133,765	181,476	31,212	41,929	19,484	7,926	415,792	
September	189,464	187,561	14,136	439,430	40,612	17,971	889,174	
October	665,167	118,343	12,560	582,333	299,728	33,110	1,711,241	
November	1,033,001	118,142	12,401	402,252	412,224	3,160	1,981,180	
December	794,363	177,280	85,700	459,520	616,999	128,087	2,261,949	
Total	6,505,102	1,621,579	344,441	2,865,312	1,583,788	508,858	13,429,080	

***Other States includes all not included in Delta and Southeast.

Sales by type of buyer varied considerably among regions. Catfish processors of all types (including retail seafood markets who purchase live catfish and do their own processing) were a significant market for producers in the Southeast and the Delta regions. This market accounted for almost 75 percent of total sales in the Southeast and approximately 64 percent in the Delta Region. In contrast, such sales comprised only 11.2 percent of total sales in the "Other States" area. Sales to firms which were exclusively farm-cultured catfish processing plants totaled approximately 5.8 million pounds in all the regions combined, or about 17 percent of total sales.⁴

The Delta Region was the only one in which haulers of live fish were an important outlet. Sales to live haulers and to pay lakes, both necessarily parts of the live market, totaled more than four million pounds liveweight in 1970. In the states outside the Delta and Southeastern regions ("Others"), individuals and eating establishments were the most important markets, accounting for approximately 73 percent of total sales.

Prices received from processors for foodfish ranged from a low of 31 cents per pound to a high of 36 cents in all areas except Texas, which reported sales of 191,828 pounds to processors, at an average price of 52 cents per pound liveweight. Prices received from haulers of live fish and pay lake operators ranged from 35 to 52 cents per pound. Kansas farmers reported selling 13,922 pounds of fish to live haulers for 52 cents per pound.

Average prices received for foodfish from individuals, eating establishments, and the "other" category varied widely, ranging from a low of 39 cents to a high of 80 cents per pound liveweight. Sales to these categories were usually small and additional costs were incurred in harvesting; and to some extent dressing costs may have been included. In editing the survey, when a dressed price was reported, a dressing factor of 60 percent was used to arrive at a live price.

On a state basis, the average price received per pound liveweight ranged from 33 cents in Georgia to 67 cents in Kansas and Texas. Mississippi averaged 34 cents, Missouri and Tennessee 45 cents, Oklahoma and California 49 cents, and the "Other States" area averaged 50 cents per pound liveweight for fish sold.

Excluding the value of Mississippi fingerling sales, cash receipts to farmers from sales of foodfish and fingerlings were in excess of \$16 million in 1970. Delta farmers generated \$9,956,686, Southeast farmers \$2,446,855, and "Other States" farmers \$3,854,881.

⁴Table 11 shows more than 19 million pounds of liveweight sales to processors of all types. Follow up of survey response indicates that a large proportion, so reported, was actually sold live to retail seafood outlets which did their own processing. A canvas of processors resulted in the 5.8 million pound figure.

Catfish fingerling producers reported sales in excess of 214 million fingerlings in 1970. Mississippi farmers estimated their fingerling sales around 162 million. The estimate of the number of acres of foodfish produced during 1970, but rather small in comparison to the number of fingerlings sold seems excessive in relation to the number of fingerlings produced. Caution must be exercised in using estimates of fingerling production and sales until farmers have become more experienced in estimating production.

Sales by size of fingerlings by region are shown in Tables 13 and 14 (in detail by state in Appendix D). Sizes sold ranged from under four inches, to 10 inches and over in length. Approximately one-fourth of the fingerlings sold were less than four inches in size, one-half were four to six inches, and the other were over six inches. Less than one percent were 10 inches or longer. Relatively, more small size fingerlings were sold in the Delta than in other areas.

Generally, the price received for fingerlings varied with size. The most "quoted" price was one cent per inch of length. Producers indicated they sold more than four million fingerlings for less than three cents each. More than one million of these were from six to eight inches in length, and the rest were under four inches. At the other extreme, producers sold in excess of eight million fingerlings for eight cents and over, and one-half million of these were under four inches in length.

Cash receipts to farmers (excluding Mississippi) for fingerling sales were \$2,829,355. The two Delta states of Arkansas and Louisiana accounted for \$1,082,361, the Southeast Region for \$909,173 and the "Other States" for \$837,815.

C. The Catfish Processing Industry

The processing of farm-cultured catfish was originally confined primarily to small farm-site processing plants designed to serve local markets—seafood outlets, restaurants, and direct consumer sales. However, the larger independent and co-operative processing plants organized in recent years have aided in moving a greater supply through a broader-based marketing effort. They have assumed the burden of supplying local markets and have opened entirely new ones. One of these has been the franchised fast-food restaurant specializing in catfish dishes. Unfortunately, with some exceptions, this has not proven to be a stable market, since numerous failures in these specialty restaurants have occurred.

In 1969 and 1970, vigorous efforts were initiated toward capturing some of the mass consumer markets via seafood wholesalers and distributors, and restaurant and institutional suppliers. Some processors have met with such success in these efforts that they can no longer be considered local or even regional suppliers. In fact, there were processors in 1970 who shipped more than 60 percent of their production to customers beyond the region in which they were located.

TABLE 13

VOLUME OF FINGERLINGS SOLD BY SIZE AND PRICE, BY REGIONS, 1970

Size of fingerling	Cents per fingerling			Number of fingerlings sold	8 & over	Total
	<2	3<4	4<5			
Delta*						
<u>Under 4"</u>	2,761,127	3,887,719	790,212	1,137,605	3,251	0
4"-6"	0	566,364	325,150	5,508,592	2,012,067	1,86,696
6"-8"	1,132,728	0	0	766,734	338,424	2,183,382
8"-10"	0	0	0	0	0	0
10" & over	0	0	0	0	0	0
Total	<u>3,893,855</u>	<u>4,454,083</u>	<u>1,115,362</u>	<u>7,412,931</u>	<u>2,353,742</u>	<u>2,370,078</u>
Southeast**						
<u>Under 4"</u>	0	0	0	2,431,444	0	0
4"-6"	0	0	9,715,313	1,033,605	219,471	165,548
6"-8"	0	0	0	958,313	0	1,247,427
8"-10"	0	0	0	0	0	0
10" & over	0	0	0	0	0	0
Total	<u>0</u>	<u>0</u>	<u>9,715,313</u>	<u>4,423,362</u>	<u>219,471</u>	<u>1,412,975</u>
Others***						
<u>Under 4"</u>	267,191	391,146	198,945	549,320	4,027	40,273
4"-6"	0	1,739,924	1,994,120	306,940	230,333	452,815
6"-8"	0	0	50,000	526,886	71,702	1,762,872
8"-10"	0	0	0	0	0	663,743
10" & over	0	0	0	0	0	3,375,560
Total	<u>267,191</u>	<u>391,146</u>	<u>1,938,869</u>	<u>2,593,440</u>	<u>837,853</u>	<u>342,308</u>
					<u>6,359,757</u>	<u>12,730,564</u>

(continued)

TABLE 13
VOLUME OF FINGERLINGS SOLD BY SIZE AND PRICE, BY REGIONS, 1970 (continued)

Size of fingerling	Cents per fingerling			Number of fingerlings sold	8 & over	Total
	<2	3<4	4<5			
	- - -	- - -	- - -	- - -	- - -	- - -
United States						
Under 4"	3,028,318	4,278,865	989,157	4,118,369	7,278	40,273
4"-6"	0	566,364	11,780,387	8,536,317	2,538,478	582,577
6"-8"	1,132,728	0	0	1,775,047	865,310	3,502,511
8"-10"	0	0	0	0	0	0
10" & over	0	0	0	0	0	0
Total	4,161,046	4,845,229	12,769,544	14,429,733	3,411,066	4,125,361
						8,465,073
						52,207,052

* Delta includes Arkansas, Louisiana and Mississippi, but Mississippi data not included.

** Southeast includes Alabama, Georgia, Tennessee and South Carolina.

*** Others includes all not included in Delta and Southeast.

TABLE 14

VALUE OF FINGERLING SALES BY SIZE AND PRICE, BY REGIONS, 1970

Size of fingerling	<2		3<4		4<5		5<6		6<7		7<8		8 & over		Total		
Delta*																	
Under 4"	55,222		136,069		35,559		62,568		211		0		0		289,629		
4"-6"	0		19,822		14,631		302,972		130,783		14,001		0		482,209		
6"-8"	22,654		0		0		42,169		21,997		163,753		29,913		280,486		
8"-10"	0		0		0		0		0		0		0		130		
10" & over	0		0		0		0		0		0		0		29,913		
Total	77,876		155,891		50,190		407,709		152,991		177,754		59,956		1,082,367		
Southeast**																	
Under 4"	0		0		0		437,188		133,729		14,264		0		0		133,729
4"-6"	0		0		0		56,847		52,707		0		12,416		77,597		598,312
6"-8"	0		0		0		0		0		0		93,556		30,869		177,132
8"-10"	0		0		0		0		0		0		0		0		0
10" & over	0		0		0		0		0		0		0		0		0
Total	0		0		0		437,188		243,283		14,264		105,972		108,466		909,173
Other States***																	
Under 4"	5,343		13,689		8,952		30,210		261		3,020		36,223		97,698		
4"-6"	0		0		78,295		109,675		19,950		17,274		141,028		366,222		
6"-8"	0		0		0		2,750		34,247		5,377		53,098		95,472		
8"-10"	0		0		0		0		0		0		0		270,043		
10" & over	0		0		0		0		0		0		0		8,380		
Total	5,343		13,689		87,247		142,635		54,458		25,671		508,772		837,815		

(continued)

TABLE 14
VALUE OF FINGERLING SALES BY SIZE AND PRICE, BY REGIONS, 1970 (continued)

Size of fingerling	Cents per fingerling			Dollars	Total
	<2	3<4	4<5		
				5<6	6<7
<u>United States</u>					
Under 4"	60,565	149,758	44,511	226,507	3,020
4"-6"	0	19,822	530,114	469,494	164,997
6"-8"	22,654	0	0	97,626	56,244
8"-10"	0	0	0	0	0
10" & over	0	0	0	0	0
Total	83,219	169,580	574,625	793,627	221,713
					309,397
					677,194
					2,829,355

* Delta includes Arkansas, Louisiana and Mississippi, but Mississippi data not included.

** Southeast includes Alabama, Georgia, Tennessee and South Carolina.

*** Others includes all not included in Delta and Southeast.

1. Processor Marketing of Catfish

Personal interviews with 11 farm-cultured catfish processors were conducted during the latter part of 1970 for the purpose of discussing their industry data needs and data gathering problems and capabilities. Information obtained during these interviews, combined with data gathered monthly during 1970 by the National Marine Fisheries Service, was used for the following analysis of processor activities for the year.

Total sales of farm-cultured catfish by processors reached 3.1 million pounds during 1970 (Table 15). This does not include processor products sold by farm producers who maintain their own small processing facilities, or sales by other independent seafood dealers who buy live catfish and do their own processing. Monthly sales were relatively stable throughout the year (see Figure 5), with the exception of February and June highs (373 thousand and 353 thousand pounds, respectively), averaging 258 thousand pounds per month. Although it is possible that individual processors may have experienced inventory shortages, particularly in popular sizes, during part of the year, in the aggregate there was an average five-month inventory in reserve (based on average sales of 258 thousand pounds per month). During the low production period of April through September, there was a four-month reserve inventory. During the peak processing period, these inventories represented a reserve as great as six months.

Previous observations regarding product mix were verified by the survey; over 95 percent of product sales were pan-ready dressed fish. Neither steaks nor fillets were sold in significant quantities. This indicates, to some degree, demand for the pan-ready form, but it also reflects current inability to process and sell profitably fillets, steaks and other product forms. (See Table 16.)

Fish dealers and restaurants were the primary processor markets during 1970. (See Figure 6.) Sales to fish dealers (primarily wholesale distributors and combination wholesale-retail fish dealers) accounted for almost 53 percent of total sales, or about 1.6 million pounds. Restaurants and other food service establishments accounted for approximately 1.2 million pounds, or about 40 percent. Only about 240 thousand pounds, less than eight percent of total sales, went to supermarkets and other grocery stores. Frozen products accounted for a large portion of sales to all three market categories. Of the total 1.6 million pounds sold to fish dealers, more than one million pounds, about two-thirds, were the frozen product. The frozen proportion was even greater among the other two outlets, almost 80 percent of sales to food markets and about 96 percent of sales to restaurants. Relatively few restaurants and food markets have the necessary facilities, and/or frequency of fish demand, to hold fresh fish prior to resale.

Almost two-thirds of total processor sales were fish weighing from eight to 16 ounces. (See Table 17.) In contrast, the survey of wholesale markets indicates (see Figure 11, p. 72) a stronger demand for product (or portions) under eight ounces in

TABLE 15

MONTHLY PRODUCTION, INVENTORY, SALES DATA,
SURVEY OF FARM-CULTURED CATFISH PROCESSORS, 1970

	Finished Processed Product ¹ 1970	Cumulative Production	Ending Inventory Pounds	Change in Inventory	Net Sales ²	Prices Paid ³	Prices Received ⁴
Jan.	412,281	412,281	1,268,876 ⁵	(6)	300,000 est.	.35-.40	.75-.90 Frozen .90-.1.10 Fresh
Feb.	653,999	1,066,280	1,549,820	280,944	373,055	.35-.40	.75-.90 Frozen .90-.1.10 Fresh
Mar.	311,087	1,377,367	1,715,569 ⁵	165,749 ⁵	145,338	.35-.40	.75-.90 Frozen .85-.1.10 Fresh
Apr.	106,184	1,483,551	1,619,345	- 96,224	202,408	.32-.40	.75-.90 Frozen .85-.1.10 Fresh
May	58,222	1,541,773	1,495,875	-123,470	181,692	.32-.45	.75-.90 Frozen .90-.1.10 Fresh .52-.60 Fresh S/H ⁷
June	89,434	1,631,207	1,231,979	-263,896	353,330	.32-.45	.75-.90 Frozen .90-.1.10 Fresh .52-.57 Fresh S/H ⁷
July	132,450	1,763,657	1,147,856 ⁵	- 84,123	216,573	.31-.45	.75-.85 Frozen .90-.1.10 Fresh .52-.57 Fresh S/H ⁷
Aug.	144,586	1,908,243	1,101,594	- 46,262	190,848	.32-.42	.75-.90 Frozen .90-.1.10 Fresh .52-.57 Fresh S/H ⁷

- continued -

TABLE 15 - (Continued.)
SURVEY OF FARM-CULTURED CATFISH PROCESSORS, 1970 - (Continued.)

1970	Finished Processed Product ¹	Cumulative Production	Ending Inventory Pounds	Change in Inventory - - - - -	Net Sales ² - - - - -	Prices Paid ³ - - - - -	Prices Received ⁴ Cents Per Pound - - - - -
Sept.	208,344	2,116,587	1,052,403	- 49,191	257,535	.30-.40	.75-1.16 Frozen .90-1.10 Fresh .52-.57 Fresh S/H ⁷
Oct.	432,788	2,549,375	1,194,066	141,663	291,125	.30-.35	.70-1.10 Frozen .42-.60 Fresh S/H ⁷
Nov.	427,964	2,977,339	1,332,776	138,710	289,254	.30-.37	.65-1.10 Frozen .42-.60 Fresh S/H ⁷
Dec.	460,450	3,427,789	1,498,745	165,969	294,481	.30-.37	.65-1.16 Frozen .42-.60 Fresh S/H ⁷
Totals	3,437,789				3,095,639		

¹Whole, skinned, collarbone removed, tail on, individually frozen and/or fresh.

²Previous month's inventory, plus current month's production, less current month's inventory.

³Prices paid to farmer, harvested, at plant site.

⁴Prices received by processors on all order sizes, f.o.b. processing plant or cold storage facility.

⁵Includes inventory adjustment.

⁶No inventory data collected prior to January, 1970.

⁷S/H - Skin and Head on.

FIGURE 5

MONTHLY PRODUCTION, SALES AND INVENTORIES, FARM-CULTURED CATFISH PROCESSORS, 1970

Thousands Pounds

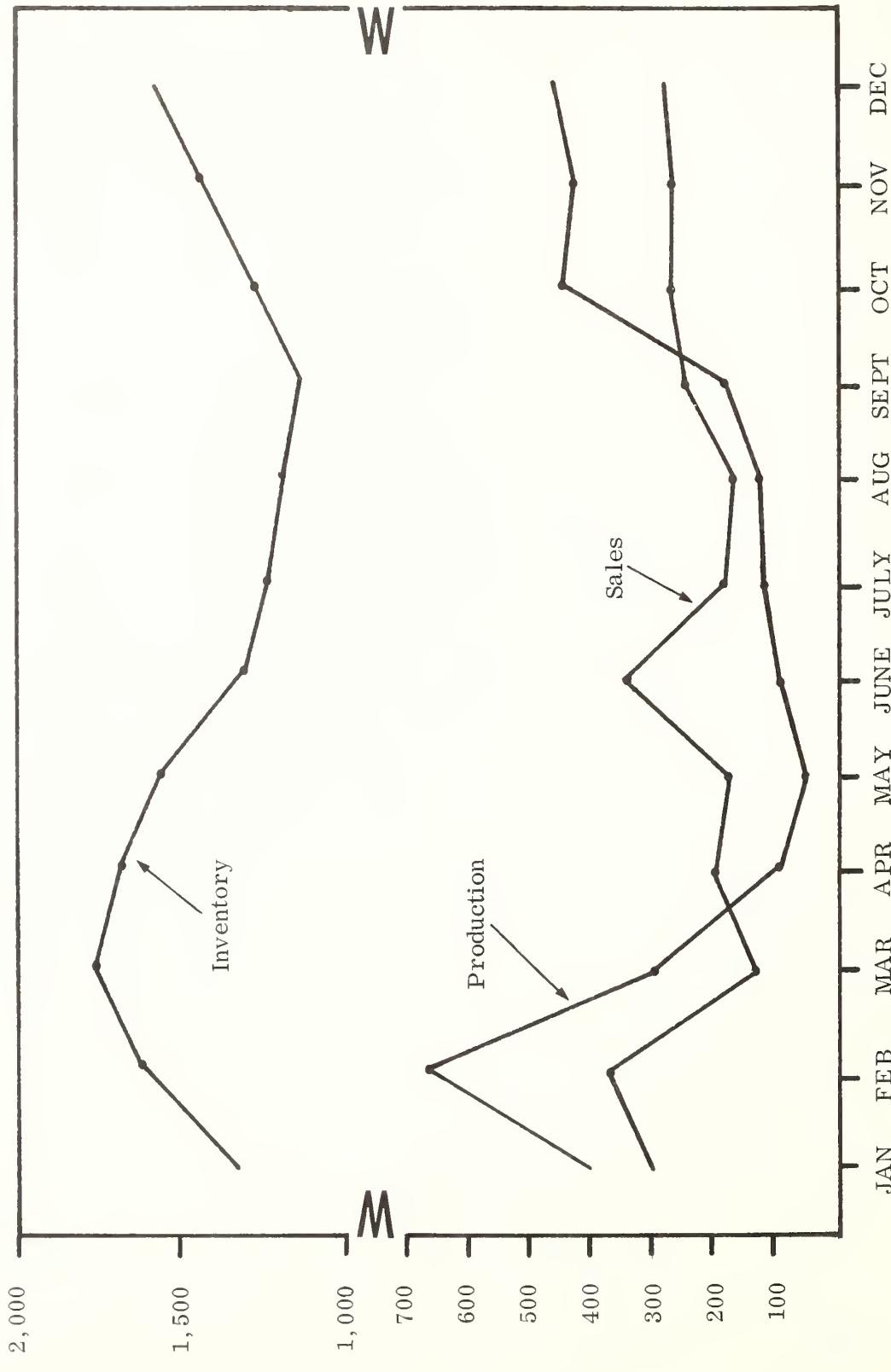


TABLE 16

ESTIMATED SALES OF FRESH AND FROZEN FARM-CULTURED CATFISH
BY PROCESSORS, 1970

<u>Markets</u>	<u>Product Form</u>			<u>Total</u>	<u>Percent</u>
	<u>Pan-Ready</u>	<u>Steaks</u>	<u>Fillets</u>		
	(000 pounds)				
Restaurants	1,161	67	2	1,230	39.7
Food markets	239	--	2	241	7.8
Fish dealers	1,589	1	35	1,625	52.5
Other	--	--	--	--	-
 Total	 2,989	 68	 39	 3,096	 100.0
	96.5%	2.2%	1.3%	100.0%	

weight, or 16 ounces and over. This can perhaps be explained by the absence of significant penetration by these processors of the institutional markets which require a large volume of small portions, and the far northern markets which express a desire for large size catfish.

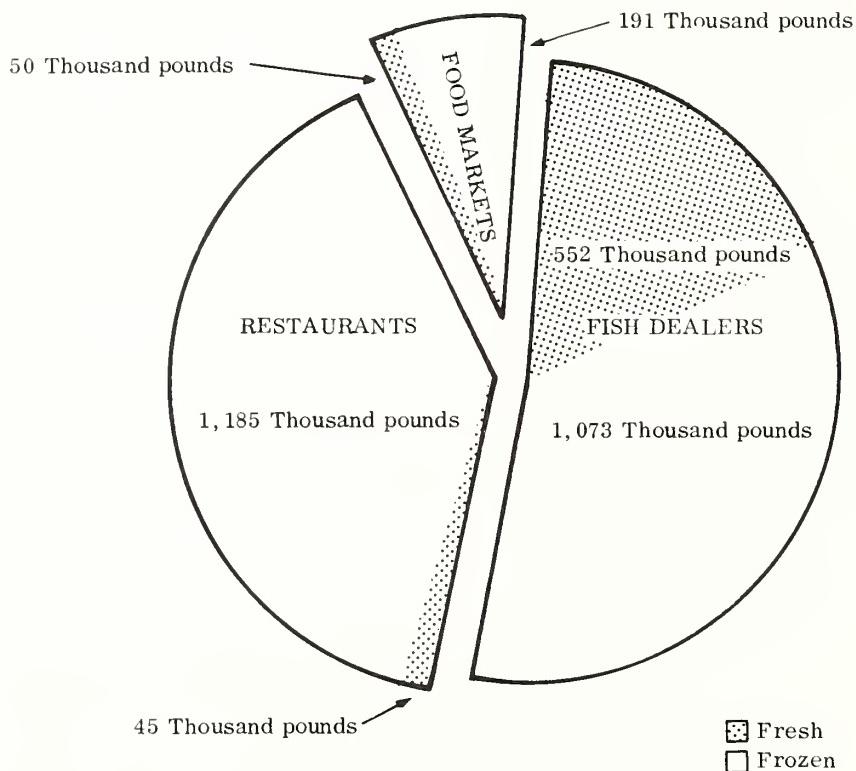
Farm-cultured catfish processors have in the past been viewed as primarily local marketers. The recent processor survey does not uphold this conclusion. Less than 31 percent of shipments, during 1970, were to destinations within 100 miles of processing plants. (See Table 18.) Processors were not asked for details regarding longer distance shipments during the original survey; however, follow-up interviews, with selected processors, revealed the probability that as much as 50 percent of total estimated shipments in 1970 were to destinations beyond 300 miles from processing plants. Thus, it appears that current processor marketing efforts are at least regional in scope, with indications of aggressive effort at penetrating national markets. Future processor surveys, as proposed in Part III, would solicit more dependable data on shipment distances by adding additional mileage categories in the questionnaire. (See Appendix B, p. 136.)

2. Observations Regarding Current Processor Technology

The processing sector of the industry has experienced considerable growth, particularly during the past two years, in spite of numerous business failures. Of

FIGURE 6

ESTIMATED PROCESSOR SALES OF FRESH AND FROZEN
PRODUCT BY MARKET OUTLET, 1970



six processors in operation early in 1969, only two continued in operation under the same ownership through 1970. Yet, at the close of 1970, there were at least 14 operational processing plants, and there were plans for construction of others during 1971.

During the latter part of 1970 and early 1971, 10 of the 14 processing plants were visited for the primary purpose of discussing their role in the overall data gathering and reporting system outlined in Part III. The secondary purpose was to collect data which might be useful in delineating the processing norms for this segment of the industry.

TABLE 17

ESTIMATED PROCESSOR SALES OF FARM-CULTURED CATFISH,
BY SIZE RANGE, 1970

<u>Size Ranges</u> (dressed weight)	Total <u>Pounds</u> (000 pounds)	Percent of <u>Total Pounds</u>
Less than 8 ounces	548	17.7
8 ounces to less than 12 ounces	1,040	33.6
12 ounces to less than 16 ounces	950	30.7
1 pound to less than 1 1/2 pounds	515	16.6
1 1/2 pounds and over	43	1.4
<hr/>		
Total	3,095	100.0

TABLE 18

ESTIMATED PROCESSOR SHIPMENTS BY DISTANCE CATEGORY, 1970

<u>Distance Categories</u>	<u>Shipments</u> (000 pounds)	<u>Percent</u>
Less than 25 miles	102.1	3.3
25 miles - less than 50 miles	92.8	3.0
50 miles - less than 100 miles	758.4	24.5
100 miles and over	2,142.7	69.2
<hr/>		
Total	3,096.0	100.0

Most of the processing plants visited process fish retained on the premises in holding vats; and in most instances the plants are fed with stunned live fish. Several have attempted to work with fish that have been held dead on ice. But, in most instances, this method was not considered satisfactory by those processors trying it because of such factors as changes in the skin, causing difficulty in skinning operations, and lack of purging (assisted naturally when live hauling and holding is employed) causing frequent line shutdowns for the purpose of cleaning up. Almost all plants have returned to the practice of using stunned live fish.

Table 19 compares each of the plants surveyed relative to the degree of applied technology. Assuming they represent the "typical" catfish processing plant currently in operation, then the "state-of-the-art" in catfish processing operations would have to be classified as predominantly manual at this time. There were, as this table shows, many instances of mechanization of certain segments of operations (for example all plants visited had mechanized deheading operations); and in one of the plants, 10 of the 13 operations analyzed were mechanized to some extent. However, no semiautomatic or automatic operations were observed in any of the plants.

Several operations noted at the surveyed plants could be mechanized or semiautomated with slight additional effort and capital. All operations analyzed were technically amenable to automated processing, although such changes may not be economically feasible at this time.

Generally, the layout of the plants visited did not appear to have been planned prior to construction of the buildings. In two exceptional cases it appeared that material flow had been considered; process lines were laid out according to sound work simplification principles. Specifically, these plants used gravity flow where possible to move fish through successive processing steps; and used either straight or L-shaped processing lines which tended to minimize step switchbacks, excessive handling, and other common production bottlenecks.

Several of the plants appeared not to have planned adequately for the floor space needed for indirect support operations (*i.e.*, carton fabrication, labeling equipment, supplies, storage, etc.). In addition, only four of the plants visited appeared to have floor space which could be used for expanded facilities without considerable additional capital outlay.

The offal from fish processing operations is a nuisance, in addition to presenting definite sanitation problems in and around plants. All the plants visited had, in some way, attempted to install economical and workable disposal procedures. The results of their efforts ranged from totally inadequate, by their own admission, to just fair. Some were using vacuum systems for removal of eviscerate, which flowed directly to waste containers outside the plant. Others relied on manual removal and/or flushing through floor drains which led to outside holding areas. Disposal of the waste once it was out of the plant was also a problem. Very few had found a totally satisfactory solution. Some plants sold the offal for conversion to fish meal, or for feeding as a supplement to hogs. Others simply buried it, or paid to have it hauled away.

TABLE 19

CATFISH PROCESSING TECHNOLOGY
COMPARATIVE ANALYSIS—10 PLANT SITES
PROCESSOR SURVEY, 1970

Plant No.	Seining/ Sizing	Processing Operations/Steps—Variable Sequence										
		Weighing (Input)	Stunning	Dorsal Removal	Skinning	Heading	Gutting	Washing (Cleansing)	Picking/ Trimming Final Inspection	Weighing/ Sorting	Packaging	Freezing/ Chilling
1.	MAN	MAN	MAN	MAN	MECH	MECH	MAN	MAN	MAN	MAN	MAN	MAN
2.	MECH ¹	MECH	MAN	MECH	MECH	MECH	MECH	MAN	MAN	MECH	MECH	MAN
3.	MAN	MAN	MAN	MAN	MAN ²	MAN	MAN	MAN	MAN	MAN	MAN	MAN
4.	MECH ³	MECH	MAN	MAN	MECH	MECH	MECH	MAN	MECH	MAN	MAN	MAN
5.	MAN	MAN	MAN	MAN	MAN	MECH	MAN	MAN	MAN	MAN	MAN	MAN
6.	MAN	MAN	MECH ⁴	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN
7.	MECH ⁵	MECH	MAN	MAN	MAN	MECH	MAN	MAN	MAN	MAN	MECH	MAN
8.	MECH	MECH	MAN	MAN	MECH	MECH	MAN	MAN	MAN	MAN	MECH	MAN
9.	MAN	MAN	MAN	MECH	MECH	MECH	MAN	MAN	MAN	MAN	MECH	MAN
10.	MECH	MAN	MAN	MECH	MECH	MAN	MAN	MAN	MECH	MECH	MAN	MAN

NOTES

1. Seining by electric hoist and metal basket; no sizing at input.
2. Also used water skinning machine on some orders.
3. Seining by electric hoist and metal basket; no sizing at input.
4. Stunner built into overhead, shackles conveyor, stuns fish individually.
5. Seining by electric hoist and metal basket; no sizing at input.

LEGEND

Operation Process Modes
Manual — MAN
Mechanized — MECH
Semi-automatic — SAUTO
Automatic — AUTO

At the time of visits, none of the plants were being fully utilized; and most reported this situation existed during much of the year. In addition to the fact that some did not operate year round, there were days during their normal operating seasons when they were without fish to process. It follows that costs per fish processed for those plants were higher than they would have otherwise been in a fully utilized plant, where fixed costs could be spread over a greater volume of production.

The application of manpower in the plants surveyed, as summarized in Table 20, points out the differing concepts existing within the industry. Average overhead rate for these plants, one criterion by which manpower efficiency can be examined, was .217, or about one overhead position per four direct positions. Statistically, the usage median was .22 and the mode was .25. Individual plants differed substantially from these rates; one plant which had a one to one ratio (normally considered excessive) had the lowest output per man-day of all plants visited. However, the plant with the next highest overhead to direct labor ratio (1:1.5) reported the highest output per man-day (667 pounds). The data collected indicates that the mean output per man-day for all these plants was approximately 398 pounds; the median output per man-day was 412 pounds.

The information presented herein is offered as a description of the current situation, and not as an economic analysis of current processor technology. Any apparent correlation between the factors discussed, output per man-day versus degree of mechanization, for example, would have to be considered inconclusive. The significance of similarities or differences observed, and economic justifications for particular production methods, could only be determined after a thorough study of all factors influencing product output and cost.

D. The Foreign Supply Situation

Catfish of several species, both freshwater and saltwater, were imported into the United States from a total of eight countries in 1970. Brazil has been the major source of imported catfish products, accounting for 80 to 90 percent of all imports in the 1969-1971 period. (See Table 21.)

Only a negligible amount of the imports originating in British Honduras were pond-raised. The remainder, well over 99 percent, was wild production. Often, salt or brackish water species were used exclusively. They were also blended into some shipments of predominantly freshwater species. Two Brazilian firms, Leal Santos, S.A., and Cunha Amaral, S.A., have been the major exporters of the saltwater species. The bulk of their shipments entered the United States through the ports of the upper Atlantic Coast.

The major imports of freshwater catfish from Brazil originated from two firms, Henderson Portion Pack, Inc., and Vasquensales, S.A. The former is a subsidiary

TABLE 20

MANPOWER - PRODUCTION RATES,
PROCESSOR SURVEY, 1970

Plant No.	Manpower Classification		Overhead Rate	to Direct Ratio	Overhead Rate	Output Rate ¹	Output/Man-Day ²	--- Pounds Liveweight ---
	Overhead	Direct						
1.	1	13	1:13	.	.07	4,000	308	
2.	3	26	1:8.7	.	.10	10,000	385	
3.	4	12	1:3	.	.25	2,000	167	
4.	7	31	1:4.4	.	.18	13,600	439	
5.	1	3	1:3	.	.25	1,340	447	
6.	8	8	1:1	.	.50	1,000	125	
7.	8	34	1:4.3	.	.19	12,000	353	
8.	8	22	1:2.8	.	.27	10,000	455	
9.	1	16	1:16	.	.06	10,000	625	
10.	8	12	1:1.5	.	.40	8,000	667	
Totals		49				71,940		
Averages:								
As reported			1:3.61			.2168	406	
Adjusted with high and low out			1:3.83			.2073	398	

¹Basis: Eight-hour shift or day; longer shifts adjusted accordingly.

²Output Rate per 8 hours ÷ direct labor.

TABLE 21

SOURCE OF UNITED STATES CATFISH IMPORTS, 1969-1971

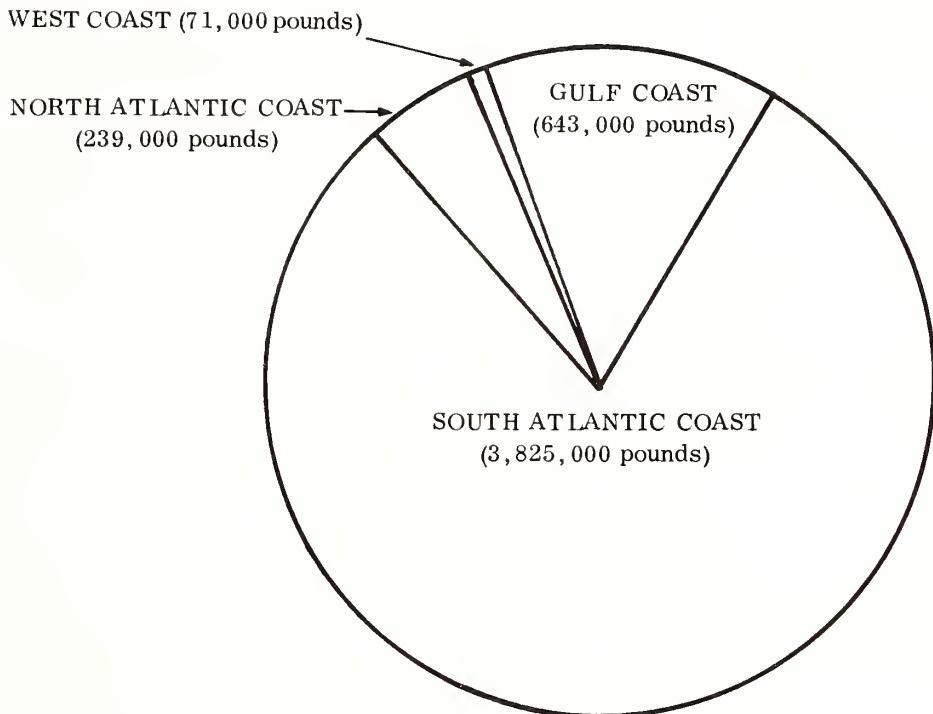
<u>Country of Origin</u>	<u>Imports¹</u>					
	<u>1969</u>		<u>1970</u>		<u>7 Months, 1971</u>	
	<u>000 Pounds</u>	<u>%</u>	<u>000 Pounds</u>	<u>%</u>	<u>000 Pounds</u>	<u>%</u>
Brazil	3,211	85	4,209	88	990	83
Mexico	585	15	373	8	180	15
Malaysia	0	0	69	1	20	2
Guatemala	0	0	9	neg.	5	neg.
Honduras	0	0	4	neg.	1	neg.
Pakistan	0	0	2	neg.	0	0
Philippines	0	0	0	0	1	neg.
Singapore	0	0	2	neg.	2	neg.
Argentina	0	0	115	2	0	0
 Total (rounded)	 3,796	 100	 4,782	 100	 1,199	 100

¹Excluded catfish originating in Iceland and Scandinavian countries, assuming that these products are probably "ocean catfish" (wolffish).

of the Borden Company in the United States, and the latter is owned by Brazilian interests. A third major processor in the same area was not exporting catfish to the United States, but had the capability to do so. This firm, Primar, S.A., was formerly owned by W. R. Grace, but is now owned by Adela, an international investment fund.

Catfish are imported primarily through 10 United States ports of entry. In 1970, ports in the South Atlantic Coastal states accounted for approximately 80 percent of all imported catfish. Ports along the Gulf Coast received a little more than half a million pounds, 13.4 percent of the total, while the West and North Atlantic Coast ports combined only received about 300 thousand pounds. During the period 1969-1971, the ports of Charleston, South Carolina, and Wilmington, North Carolina were the dominant points of entry for catfish into domestic markets. (See Figures 7 and 8.)

FIGURE 7
REGIONAL PATTERN OF CATFISH IMPORTS, 1970

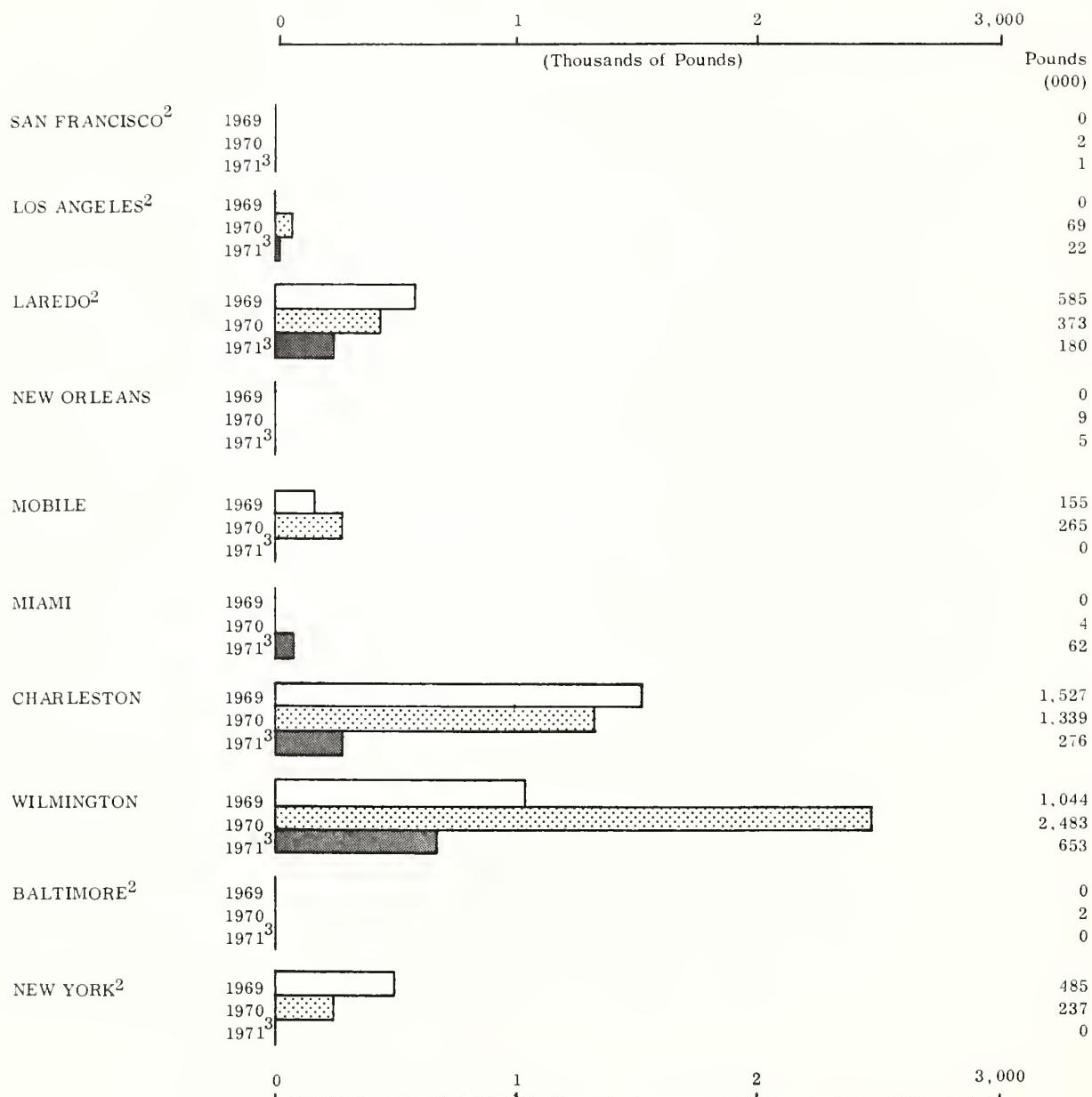


It is difficult to interpret the future impact of imports on the domestic market for catfish. The latent supply is obviously large. Relatively few rivers in South and Central America have been exploited at all, yet freshwater catfish of some species are indigenous to all. Those which are being exploited, principally the lower Amazon, are being fished far below their maximum sustainable yield. Moreover, this is probably true for large stocks almost certain to exist in the Eastern Hemisphere.

Yet, 1971 imports appeared to be running substantially below both 1969 and 1970. Based on the record for the first seven months, catfish imports for the entire year were forecast at approximately 2.1 million pounds. This was 44 percent below the 1969 figure and almost 56 percent below 1970.

This decline was largely due to problems at the current primary source of supply, Central and South America. These difficulties, and similar problems involved in exploiting other foreign stocks, may be a substantial barrier to further development for a long time.

FIGURE 8

U. S. CATFISH IMPORTS¹ BY PORT OF ENTRY, 1969-1971

¹Excluding catfish originating in Iceland and Scandinavian countries, assuming that these products are probably "ocean catfish" (wolffish).

²Total imports, but probably contain substantial quantities of saltwater species of catfish.

³First seven months only.

In Brazil, for example, the major constraint on expansion is the system by which fish are handled in reaching the processor. Local fish dealers buy from individual fishermen, collect a load of fish over a large area, and deliver to the processing plant. Inadequate and improper use of ice facilities can result in significant deterioration. Processors find it impractical to integrate backward into the fish collection business, or otherwise control practices at this stage, because of the political significance of displacing or regulating the local fish dealer. Many other problems compound the situation, and make it difficult to upgrade and expand foreign production rapidly.

Experience to date would indicate that several foreign species are acceptable, and often indistinguishable, from either wild or pond-raised channel catfish in the United States. This need not hold true indefinitely, however. If uniform high quality becomes a fact with pond-raised catfish, or if a brand identification program is effective, the domestic pond-raised product could become generally differentiated in the marketplace. If, however, foreign producers are able to upgrade quality, and the species are really indistinguishable from channel catfish at the consumer level, there may not be any real distinction in the marketplace.

One of the reasons that no foreign producer has come into the United States market on a large scale is the fact that the market is relatively undeveloped. The cost of organizing and building a distribution system for large volumes will probably be great. Once market development by the United States industry takes place, however, it will become very attractive for foreign producers to come into the marketplace on a large scale, without sharing the burden of the earlier development costs.

A potentially large segment of the market (fast-food restaurant and institutional suppliers) is reluctant to promote existing domestic catfish products. This reluctance is based on two major factors: (1) the belief that at the present time there are only isolated pockets of strong consumer demand for catfish; and (2) the preference by many such large suppliers for a frozen-block fillet product, which they can divide into portions sized according to orders received.

E. Markets for Catfish at Trade Outlets

1. Wholesale Markets

In accordance with procedures outlined in Part III, a survey of wholesale fish and seafood dealers was conducted in late 1970 for the purpose of gathering information on sales of catfish of all types. Questionnaires were mailed to over 500 of approximately 1,000 such dealers located in the Southern and North Central United States. Responses were received from 179, and 37 were returned as undeliverable. On the basis of this sample, wholesale catfish sales, excluding sales of cultured catfish by processors, were estimated at slightly over 29 million pounds (dressed weight) during

1970. Estimates, by region, product source, and market segments, are presented in Tables 22 and 23.

Catfish sales by wholesale fish dealers in 1966, according to an earlier study,⁵ amounted to approximately 17.6 million pounds for roughly the same survey area. The

TABLE 22

ESTIMATED WHOLESALE SALES OF CATFISH IN THE SOUTHERN AND
CENTRAL UNITED STATES, 1970

<u>Region</u>	<u>Product Source</u>					<u>Percent</u>
	<u>Farm-Raised¹</u>	<u>Domestic Wild</u>	<u>Imported</u>	<u>Unknown</u>	<u>Total</u>	
	<u>(000 pounds)</u>					
Southeast ²	--	13,435	--	--	13,435	45.9
South Central ³	721	3,164	3,257	--	7,142	24.5
North Central ⁴	838	5,950	1,817	60	8,665	29.6
Total	1,559	22,549	5,074	60	29,242	100.0
	5.3%	77.1%	17.4%	0.2%	100.0%	

¹Does not include farm-raised processed products to other than wholesalers.

²Carolinas, Georgia, and Florida.

³Alabama, Tennessee, Mississippi, Louisiana, Texas, Oklahoma, and Arkansas.

⁴Missouri, Illinois, Iowa, Minnesota, Wisconsin, Michigan, Ohio, Indiana, and Kentucky.

⁵Marsha Walters, Wholesale Market Demand for Catfish, Industrial Research and Extension Center, College of Business Administration, University of Arkansas, Little Rock, Arkansas, 1967.

TABLE 23

ESTIMATED WHOLESALE SALES OF CATFISH IN THE SOUTHERN AND
CENTRAL UNITED STATES, BY TYPE MARKET, 1970

<u>Region</u>	<u>Type Market</u>				<u>Total</u>	<u>Percent</u>		
	<u>Food</u>	<u>Fish</u>	<u>Dealers</u>	<u>Other</u>				
	<u>Restaurants</u>	<u>Markets</u>						
	----- (000 pounds) -----							
Southeast	1,370	927	10,722	416	13,435	45.9		
South Central	4,485	479	2,099	79	7,142	24.5		
North Central	4,766	1,170	1,785	944	8,665	29.6		
Total	10,621	2,576	14,606	1,439	29,242	100.0		
	36.3%	8.8%	50.0%	4.9%	100.0%			

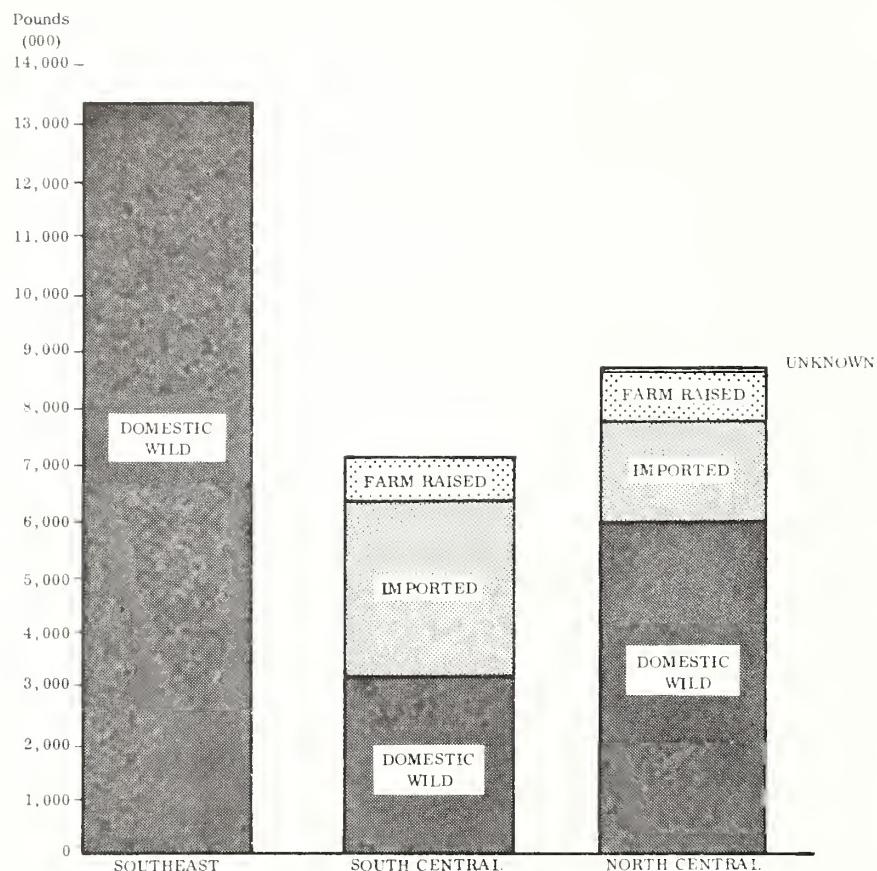
1970 estimate represents about a 13.5 percent average annual growth rate, since the 1966 study. Growth was about the same in the South and the North Central regions (5.2 million and 6.5 million pounds, respectively), but the increase in the North Central Region amounted to an average annual increase of more than 25 percent since 1966.

Almost 46 percent of total estimated wholesale catfish sales were by firms located in the South Atlantic coastal states, 13.4 million pounds of the total 29.2 million pounds. Sales in the North Central and South Central regions were relatively close to one another in terms of volume, 8.7 million and 7.1 million pounds, respectively.

Virtually all the product sold in 1970 by wholesalers in the Southeastern Region is thought to have been domestic wild catfish. (See Figure 9.) This regional estimate is compatible with National Marine Fisheries Service data on wild catch from that region, and with the concentration of the fisheries industry within that region. The other two regions of the survey accounted for all the wholesale sales of farm-cultured fish, in nearly equal volume, 838 thousand pounds in the North Central and 721 thousand pounds in the South Central Region. Other sales in the South Central Region were closely divided between domestic wild and imported catfish (approximately three million pounds), reflecting the presence of two sizable importers of Central and South American catfish in Texas. In contrast, domestic wild catfish sales far exceeded those of imported fish in the North Central Region (5.6 million versus 1.8 million pounds).

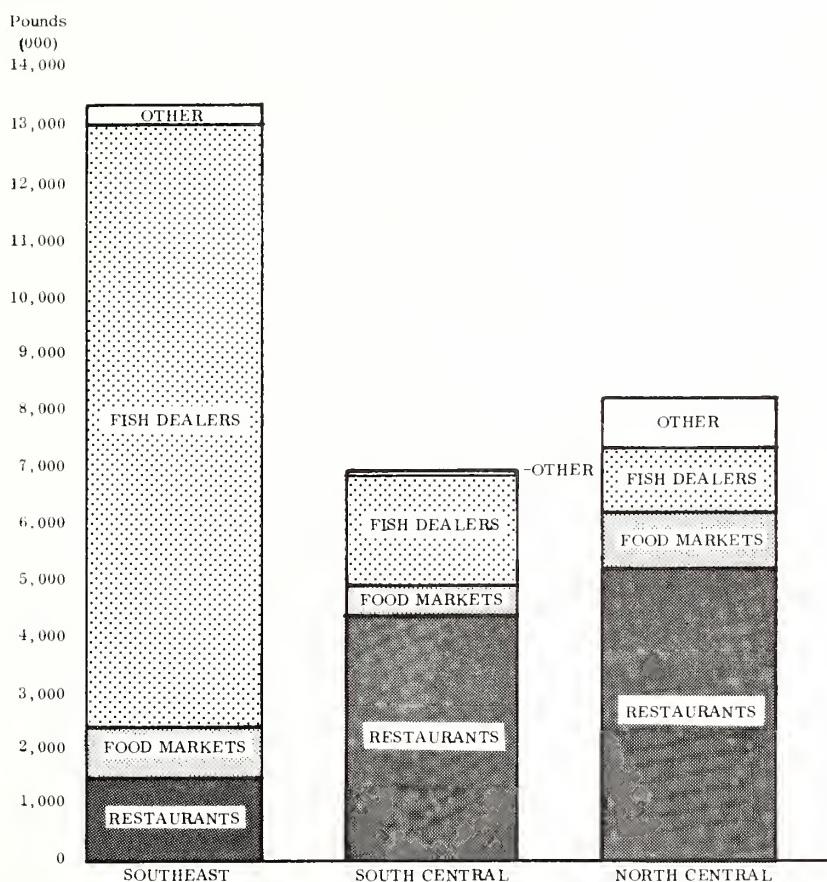
FIGURE 9

ESTIMATED WHOLESALE SALES OF CATFISH,
BY AREA AND PRODUCT SOURCE, 1970



The relative importance of the various types of market outlets for sales of catfish differed considerably between wholesalers of the three regions. (See Figure 10.) Fish dealers were by far the most important market in the Southeast, accounting for almost 80 percent of total estimated pounds sold. Sales to restaurants and food markets accounted for 1.6 percent and 6.9 percent, respectively. In contrast, restaurants were the primary wholesale market outlet in both the South Central and North Central regions, comprising 62.8 and 55.0 percent of sales, respectively. Sales to fish dealers were next in importance for both of these regions, 30 percent of total poundage in the South Central Region, and 20 percent in the North Central Region. Sales to food markets and other unidentified outlets were almost insignificant in the

FIGURE 10
ESTIMATED WHOLESALE SALES OF CATFISH,
BY AREA AND TYPE OF MARKET, 1970



South Central Region, totaling little more than half a million pounds combined; but in the North Central Region, they accounted for 14 percent and 11 percent, respectively, of total pounds sold.

Patterns of wholesale catfish sales in 1970, by product form, are indicated in Tables 24 and 25, and Figure 11. Respondents reported that approximately 75 percent of sales were the pan-ready product. This percentage would amount to about 22 million of the total 29 million pounds sold at the wholesale level nationally in 1970. Steaks, fillets and whole dressed catfish were about equal in sales volume, ranging from 6.5 to 8.5 percent of the total. Almost 70 percent of total sales were fresh catfish, and the remainder were frozen. (See Table 24.)

TABLE 24

WHOLESALE CATFISH SALES BY PRODUCT FORM, 1970

<u>Product Form</u>	<u>Fresh Product</u>		<u>Frozen Product</u>		<u>Total</u>	
	<u>000 Pounds</u>	<u>%</u>	<u>000 Pounds</u>	<u>%</u>	<u>000 Pounds</u>	<u>%</u>
Pan-ready	16,520	82.6	5,506	59.5	22,026	75.3
Steaks	431	2.2	1,461	15.8	1,892	6.5
Fillets	297	1.5	2,176	23.5	2,473	8.5
Whole	2,320	11.6	107	1.2	2,427	8.3
Live	424	2.1	-	-	424	1.4
 Total	 19,992	 100.0	 9,250	 100.0	 29,242	 100.0
	68.4%		31.6%		100.0%	

Wholesale catfish sales by type of market are shown in Table 25. The greatest variety of product forms was sold to restaurants. Although over 60 percent of such sales were pan-ready dressed fish, steak cuts accounted for about 16 percent of sales to restaurants, and fillets almost 20 percent. Sales of whole dressed fish were negligible and no live fish were reported sold to restaurants by wholesalers. Sales to fish dealers, the other major wholesale market outlet, were also primarily pan-ready fish (81.5 percent). However, whole dressed fish amounted to about 15 percent of such sales.

Sales by size range, as reported by respondents, are shown graphically in Figure 11. Over 65 percent of reported sales were fish weighing less than 12 ounces, and the largest single category (six to eight ounces) comprised 35 percent of total sales.

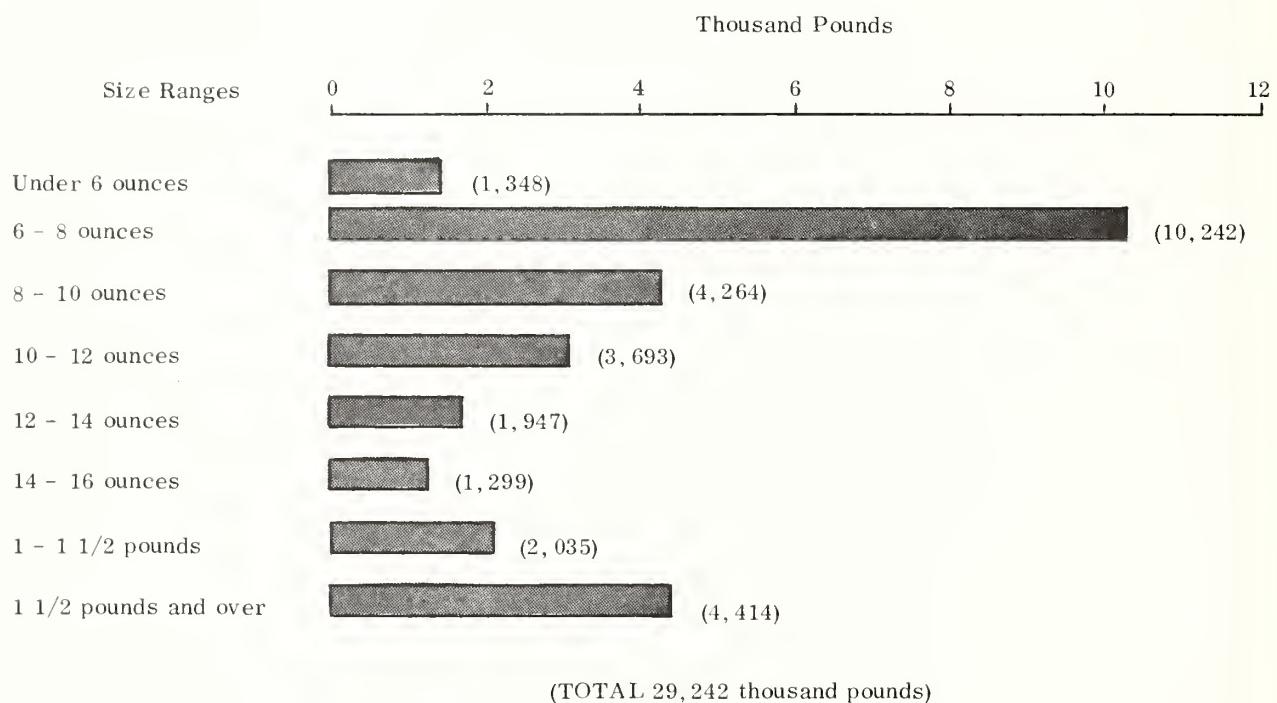
There are apparently markets for all sizes of fish, and all forms of catfish products. However, it is reasonable to expect variations in specific demand characteristics among the various markets. The above data are patterns of present sales, but may not represent true demand. They are more likely to reflect the types of product now available.

TABLE 25

WHOLESALE CATFISH SALES BY PRODUCT FORM AND MARKET, 1970

Product Form	Type Market						Total 000 Pounds %	
	Restaurants		Food Markets		Other			
	000 Pounds	%	000 Pounds	%	000 Pounds	%		
Pan-ready	6,681	62.9	2,442	94.8	11,904	81.5	999	
Steaks	1,742	16.4	62	2.4	15	0.1	73	
Fillets	2,071	19.5	33	1.3	14	0.1	355	
Whole	127	1.2	39	1.5	2,249	15.4	12	
Live	-	-	-	-	424	2.9	-	
Total	10,621	100.0	2,576	100.0	14,606	100.0	1,439	
	36.3%		8.8%		50.0%		4.9%	
							100.0%	

FIGURE 11
WHOLESALE CATFISH SALES BY SIZE CATEGORY, 1970



More than 70 percent of wholesaler purchases were directly from commercial fishermen, reflecting the dominance in current markets of domestic wild catfish. (See Table 26.) Prices paid for these products (Table 27) clearly point to one of the major problems faced by processors in marketing farm-cultured catfish to wholesale markets, a price disadvantage ranging from 12 to 14 cents per pound for processed pan-ready fish. However, these reported prices, when viewed in relation to those reported by processors (see Table 15, p. 52), indicate an opportunity for greater market penetration by farm-cultured catfish. There was apparently a downward trend in prices for farm-cultured fish during the last quarter of 1970, which, according to information obtained during personal interviews with some wholesalers, was the major factor in their decisions to add them to their line of products.

TABLE 26

WHOLESALE CATFISH SALES BY SOURCE OF SUPPLY, 1970

<u>Sources of Supply</u>	1970 <u>Sales</u> (000 Pounds)	Percent of <u>Total</u>
Fish farms	351	1.2
Processors	1,374	4.7
Brokers	5,030	17.2
Commercial fishermen	20,908	71.5
Other wholesalers	1,550	5.3
Other	29	0.1
 Total	 29,242	 100.0

TABLE 27

WHOLESALE CATFISH SALES, PRICE RANGES, 1970¹

<u>Product Type</u>	Price Ranges by Product Form			
	Pan Ready	Steaks	Fillets	Whole
----- (cents per pound) -----				
<u>Farm Raised</u>				
High range	90-95	-	-	30-35
Low range	60-75	-	-	30-35
Average range	72-75	-	-	30-35
<u>Domestic Wild</u>				
High range	70-75	65-75	58-63	8-17
Low range	32-45	65-75	58-63	32-35
Average range	58-63	65-75	58-63	29-37
<u>Imported</u>				
High range	65-68	95-1.10	61-64	-
Low range	60-70	58-61	37-40	-
Average range	60-70	76-86	40-43	-

¹Price information provided by 45 of the 74 total respondents.

2. Movement of Catfish Via Live Haulers

According to data gathered from farm producers of catfish, sales to live fish haulers or directly to farm ponds and pay lakes totaled approximately five million pounds, during 1970. There is no available data on similar movements of live domestic wild catfish. A great portion of the live catfish is believed to have moved to farm ponds and/or pay lakes. The importance of this market at the present time, and the probable continued growth resulting from anticipated expanded leisure and concurrent recreational market opportunities, make this an important area for continued study and analysis. A survey of almost 100 live fish haulers was conducted in early 1971 in an effort to learn more about this segment of the market, and to gather data on which to base some estimate of minimum movement of live domestic wild catfish. Licensed live fish haulers in nine of the 19 Southern and North Central states were mailed questionnaires concerning their activities. Although 36 percent of the live haulers returned the questionnaires, only 10 of them (less than 30 percent of the respondents) contained positive, useful information. This is not a sufficient basis for many conclusions.

The 10 respondents reported hauls of approximately 1.4 million pounds (liveweight) of farm-cultured catfish during 1970. This comprises 27.4 percent of the total sales to live haulers and pay lakes reported by farm producers for the same year. One significant feature of the response was the anticipated growth rate of these hauls, ranging from "No change" to 150 percent increase for 1971. In the aggregate, these haulers expected a 32 percent increase during 1971, to a total of 1.9 million pounds.

Classification of hauls, as reported by the few respondents, is graphically portrayed in Figure 12. To interpret these responses as being a meaningful reflection of the actual relationship of haul classifications would have to be considered conjecture. However, the ranking of these classifications is considered reasonable, with purchases for resale accounting for the most poundage, product from the haulers' ponds next in importance, and job or fee hauls playing a smaller role.

Figure 13 summarizes the responses as to disposition of farm-cultured catfish by live haulers. This chart is presented for two reasons: first, to demonstrate the danger of basing firm conclusions on such a small number of responses; and secondly, to reveal a surprising finding of the survey. It is most doubtful that 67 percent of total live hauler deliveries (4.3 million pounds according to reports from farm producers) were to restaurants and fish dealers. However, such outlets may well represent a significant market. On the basis of these few responses alone, over 900 thousand pounds (liveweight) of farm-cultured catfish were positively identified as going to these outlets, and most of this was reported by one hauler.

3. Retail Markets

Sales of catfish of all types to retail outlets are estimated to have been about 48 million pounds in 1970. This includes an undetermined quantity of fish sold to farm

FIGURE 12

CLASSIFICATION OF FARM-CULTURED CATFISH HAULED LIVE,
LIVE HAULER SURVEY, 1970

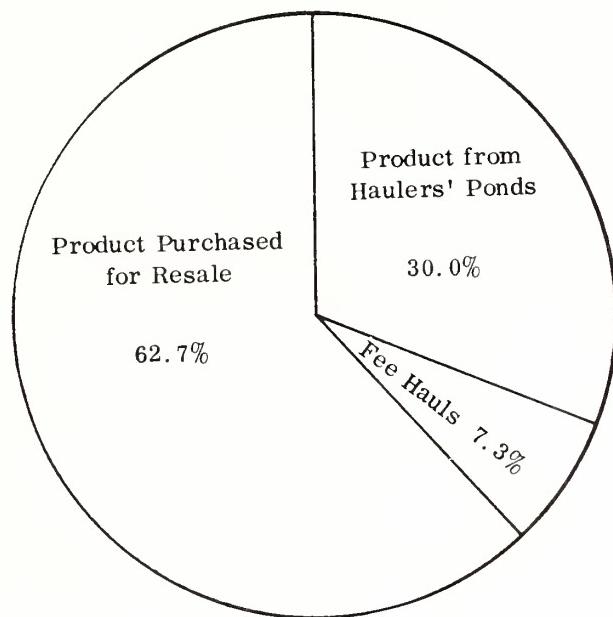
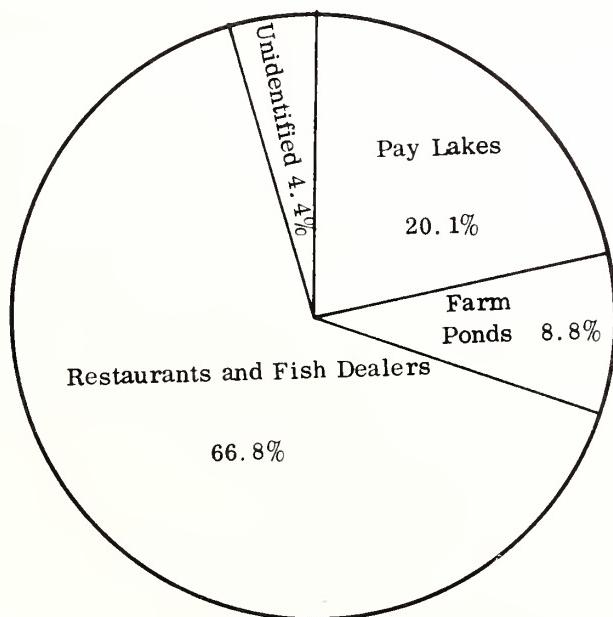


FIGURE 13

LIVE HAULER DELIVERIES OF FARM-CULTURED CATFISH TO OTHER THAN
PROCESSORS, LIVE HAULER SURVEY, 1970



ponds, but that portion is unlikely to have exceeded 500 thousand pounds for the entire year. Figure 4, p. 21, traces these sales to each type of outlet.

The largest volume of catfish (about 23 million pounds dressed weight in 1970) is believed to reach customers through retail fish and seafood outlets. Nearly 8 million pounds of this was identified with a fair degree of certainty as being farm-cultured catfish, purchased from live haulers or directly from farm producers. The remainder, bought from wholesalers, could not be clearly identified by source. However, most of it (probably more than 90 percent) was domestic wild catfish. Farm-cultured fish could not have amounted to more than 1.6 million pounds (acquired by the wholesalers from processors), nor imported products more than 5 million pounds (obtained by wholesalers from importers).

Nearly 30 percent of 1970 estimated catfish consumption was through restaurants and other food service establishments, about 14 million pounds. At least 3.3 million pounds of this was farm-cultured catfish obtained from processors, live haulers, or directly from farm producers. An additional 10.5 million pounds, obtained from wholesalers, again could not be identified by source. But certainly more than half of it was domestic wild catfish (the remainder being farm-cultured and/or imported product).

Catfish sold through grocery outlets and supermarkets is estimated to have been a little less than 3 million pounds in 1970. Aside from approximately 300 thousand pounds definitely identified as farm-cultured fish purchased from processors, it has not been classified by basic source.

Sales through these major retail market outlets, together with approximately 3.5 million pounds of farm-cultured catfish sold directly to consumers by farm producers, and approximately 1.3 million pounds sold to pay lakes and farm ponds, represent about 95 percent of total estimated catfish sales during 1970. Only about 2.5 million pounds of sales have not been identified as to type of retail outlet.

There can be little doubt that continued aggressive marketing activity will result in increased sales at all these market outlet groups. Retail fish markets are the traditional seafood outlet and they are, understandably, the largest single retail outlet for catfish at the present time. In view of findings of previous surveys⁶ that approximately 80 percent of all fishery product consumption in the Nation is in the home, grocery stores and supermarkets also appear to be highly attractive targets for vigorous marketing efforts; although they account for only a minor portion of retail catfish sales at the present time.

⁶Morton M. Miller and Darrel A. Nash, "Highlights of Fishery Consumption Patterns—Some Preliminary Findings from the 1969 Consumer Panel Survey," Bureau of Commercial Fisheries, Division of Economic Research, p. 34.

There also appears to be excellent potential among restaurants and other food service establishments, already the second largest retail outlet for catfish. They seem to have a demand for just about every product form; and catfish from all three basic sources (farm-cultured, domestic wild, and imported) are now moving through such outlets. Further sales experience directly with them, and additional research, will aid the industry in determining just which product forms are best suited for each of the various types of food service enterprises, and the best marketing strategy to be used.

APPENDIX A
EXAMPLES OF REGULAR REPORTS

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RESERVOIR PRODUCERS: NUMBER OF ACRES STOCKED FOR
 FOODSIZE CATFISH PRODUCTION, BY STOCKING DATE AND
 ESTIMATED HARVEST PERIODS, FOR RESERVOIR PRODUCERS,
 BY REGIONS AND U. S.

Regions & harvest periods	Time of stocking			Total	
	Inventory prior to Jan. 1	Plan to stock this year	Jan.-June	July-Dec.	
	Number of acres				
Delta					
Jan.-Mar.	_____	_____	_____	_____	
Apr.-June	_____	_____	_____	_____	
July-Sept.	_____	_____	_____	_____	
Oct.-Dec.	_____	_____	_____	_____	
Total	_____	_____	_____	_____	
Southeast					
Jan.-Mar.	_____	_____	_____	_____	
.	_____	_____	_____	_____	
.	_____	_____	_____	_____	
Oct.-Dec.	_____	_____	_____	_____	
Total	_____	_____	_____	_____	
Other States					
Jan.-Mar.	_____	_____	_____	_____	
.	_____	_____	_____	_____	
.	_____	_____	_____	_____	
Oct.-Dec.	_____	_____	_____	_____	
Total	_____	_____	_____	_____	
United States					
Jan.-Mar.	_____	_____	_____	_____	
.	_____	_____	_____	_____	
.	_____	_____	_____	_____	
Oct.-Dec.	_____	_____	_____	_____	
Total	_____	_____	_____	_____	

ALL PRODUCERS: NUMBER OF FINGERLINGS STOCKED BY STOCKING DATE
AND ESTIMATED HARVEST PERIODS, FOR THE THREE PRODUCER GROUPS,
BY REGION AND TOTAL

Regions & harvest periods	Time of stocking				Total	
	Inventory prior to Jan. 1	Plan to stock this year				
		Jan.-June	July-Dec.			
----- Number of fingerlings -----						
<u>Delta</u>						
Jan.-Mar.	_____	_____	_____	_____	_____	
Apr.-June	_____	_____	_____	_____	_____	
July-Sept.	_____	_____	_____	_____	_____	
Oct.-Dec.	_____	_____	_____	_____	_____	
Total	_____	_____	_____	_____	_____	
<u>Southeast</u>						
Jan.-Mar.	_____	_____	_____	_____	_____	
.	_____	_____	_____	_____	_____	
.	_____	_____	_____	_____	_____	
.	_____	_____	_____	_____	_____	
Oct.-Dec.	_____	_____	_____	_____	_____	
Total	_____	_____	_____	_____	_____	
<u>Other States</u>						
Jan.-Mar.	_____	_____	_____	_____	_____	
.	_____	_____	_____	_____	_____	
.	_____	_____	_____	_____	_____	
.	_____	_____	_____	_____	_____	
Oct.-Dec.	_____	_____	_____	_____	_____	
Total	_____	_____	_____	_____	_____	
<u>United States</u>						
Jan.-Mar.	_____	_____	_____	_____	_____	
.	_____	_____	_____	_____	_____	
.	_____	_____	_____	_____	_____	
.	_____	_____	_____	_____	_____	
Oct.-Dec.	_____	_____	_____	_____	_____	
Total	_____	_____	_____	_____	_____	

RESERVOIR PRODUCERS: NUMBER OF ACRES STOCKED
FOR FOODSIZE CATFISH PRODUCTION, BY STOCKING DATE, AND
ESTIMATED HARVEST PERIODS, FOR RESERVOIR PRODUCERS,
BY REGIONS AND U. S.

Regions & harvest periods	Time of stocking				Total	
	Period stocked		Plan to stock			
	prior to Jan. 1	Jan.-June	July-Dec.			
----- Number of acres -----						
<u>Delta</u>						
Jan.-Mar.	_____	_____	_____	_____	_____	
Apr.-June	_____	_____	_____	_____	_____	
July-Sept.	_____	_____	_____	_____	_____	
Oct.-Dec.	_____	_____	_____	_____	_____	
Total	_____	_____	_____	_____	_____	
<u>Southeast</u>						
Jan.-Mar.	_____	_____	_____	_____	_____	
.	_____	_____	_____	_____	_____	
.	_____	_____	_____	_____	_____	
Oct.-Dec.	_____	_____	_____	_____	_____	
Total	_____	_____	_____	_____	_____	
<u>Other States</u>						
Jan.-Mar.	_____	_____	_____	_____	_____	
.	_____	_____	_____	_____	_____	
.	_____	_____	_____	_____	_____	
Oct.-Dec.	_____	_____	_____	_____	_____	
Total	_____	_____	_____	_____	_____	
<u>United States</u>						
Jan.-Mar.	_____	_____	_____	_____	_____	
.	_____	_____	_____	_____	_____	
.	_____	_____	_____	_____	_____	
Oct.-Dec.	_____	_____	_____	_____	_____	
Total	_____	_____	_____	_____	_____	

ALL PRODUCERS: NUMBER OF FINGERLINGS STOCKED
BY STOCKING DATE, AND ESTIMATED HARVEST PERIODS FOR
THE THREE PRODUCER GROUPS BY REGIONS AND THE U.S.

Regions & harvest periods	Time of stocking			
	Period stocked		Plan to stock	Total
	Prior to Jan. 1	Jan.-June	July-Dec.	
----- Number of fingerlings -----				
<u>Delta</u>				
Jan.-Mar.	_____	_____	_____	_____
Apr.-June	_____	_____	_____	_____
July-Sept.	_____	_____	_____	_____
Oct.-Dec.	_____	_____	_____	_____
Total	_____	_____	_____	_____
<u>Southeast</u>				
Jan.-Mar.	_____	_____	_____	_____
.	_____	_____	_____	_____
.	_____	_____	_____	_____
Oct.-Dec.	_____	_____	_____	_____
Total	_____	_____	_____	_____
<u>Other States</u>				
Jan.-Mar.	_____	_____	_____	_____
.	_____	_____	_____	_____
.	_____	_____	_____	_____
Oct.-Dec.	_____	_____	_____	_____
Total	_____	_____	_____	_____
<u>United States</u>				
Jan.-Mar.	_____	_____	_____	_____
.	_____	_____	_____	_____
.	_____	_____	_____	_____
Oct.-Dec.	_____	_____	_____	_____
Total	_____	_____	_____	_____

ALL PRODUCERS: VOLUME AND VALUE OF SALES OF FOODSIZE CATFISH BY TYPES OF BUYER, BY REGIONS

Time periods & types of buyers	Regions and total			United States		
	Delta States		Southeast	Other States		Pounds Price Value
	Pounds	Price	Value	Pounds	Price	Value
	cents	dol.	cents	dol.	cents	dol.
First Quarter						
Processor						
Live hauler						
Pay lake						
Individual						
Eating establishment						
Others						
Subtotal						
Second Quarter						
Processor						
.						
Others						
Others						
Subtotal						
Third Quarter						
Processor						
.						
Others						
Subtotal						
Fourth Quarter						
Processor						
.						
Others						
Subtotal						

March Release

NUMBER OF FINGERLINGS AND FEMALE BROODFISH ON FARMS,
JANUARY 1, AND ESTIMATED NUMBER OF FINGERLINGS
TO BE SPAWNED THIS YEAR, BY REGIONS

Regions	Number of fingerlings on farms, January 1		Number of broodfish on farm January 1	Fingerlings per female broodfish	Number of fingerlings to be spawned
	Less than 6"	6" & over	Number of fingerlings		
Delta	_____	_____	_____	_____	_____
Southeast	_____	_____	_____	_____	_____
Other states	_____	_____	_____	_____	_____
Total	_____	_____	_____	_____	_____

NUMBER OF FINGERLINGS SOLD BY PRICE RANGE
AND VALUE, PER REGION AND U. S.

Regions	Number of fingerlings sold				Total	Value
	Under 4¢	4¢ to 6¢	7¢ to 9¢	10¢ & over		
Delta	_____	_____	_____	_____	_____	_____
Southeast	_____	_____	_____	_____	_____	_____
Other states	_____	_____	_____	_____	_____	_____
United States	_____	_____	_____	_____	_____	_____

ALL PRODUCERS: NUMBER OF FINGERLINGS FOODFISH PRODUCERS PLAN
TO STOCK AND JANUARY 1 INVENTORY OF FINGERLINGS
PRODUCERS BY SIZE GROUPS, BY REGIONS

Regions	Foodfish producers' intentions to stock		Fingerling producers' inventory January 1	
	Less than 6"	6" & over	Less than 6"	6" & over
Delta	_____	_____	_____	_____
Southeast	_____	_____	_____	_____
Other states	_____	_____	_____	_____
Total	_____	_____	_____	_____

ANALYSIS OF PROCESSOR FRESH SALES BY PRODUCT FORM AND MARKET
REGION

Product Form	MARKETS			Total
	Restaurants	Supermarkets	Fish Dealers	
(in pounds)				
Pan ready	_____	_____	_____	_____
Steaks	_____	_____	_____	_____
Fillets	_____	_____	_____	_____
Other:	_____	_____	_____	_____
Total	_____	_____	_____	_____

ANALYSIS OF PROCESSOR FROZEN SALES BY PRODUCT FORM AND MARKET
REGION

Product Form	Restaurants	MARKETS			Others	Total
		Supermarkets	Fish Dealers			
(in pounds)						
Pan ready	_____	_____	_____	_____	_____	_____
Steaks	_____	_____	_____	_____	_____	_____
Fillets	_____	_____	_____	_____	_____	_____
Other:	_____	_____	_____	_____	_____	_____
Total	_____	_____	_____	_____	_____	_____

ANALYSIS OF PROCESSOR FRESH AND FROZEN SALES BY PRODUCT FORM AND MARKET
REGION

Product Form	Restaurant	MARKETS			Total
		Supermarkets	Fish Dealers	Others	
(in pounds)					
Pan ready	_____	_____	_____	_____	_____
Steaks	_____	_____	_____	_____	_____
Fillets	_____	_____	_____	_____	_____
Other:	_____	_____	_____	_____	_____
Total	_____	_____	_____	_____	_____

Quarterly Release

ANALYSIS OF PROCESSOR SALES BY SIZE RANGE
REGION

<u>Size Ranges</u>	<u>Pounds Sold</u>
Less than 8 ounces	_____
8 ozs. to under 12 ozs.	_____
12 ozs. to under 16 ozs.	_____
1 lb. to under 1.5 lbs.	_____
1.5 lbs. and over	_____

ANALYSIS OF PROCESSOR SALES
SIZE RANGE PREFERENCE BY MARKET
REGION

Size Ranges	MARKETS		
	Restaurants	Supermarkets	Fish Dealers
(number of respondents)			
Less than 8 ounces	—	—	—
8 ozs. to under 12 ozs.	—	—	—
12 ozs. to under 16 ozs.	—	—	—
1 lb. to under 1.5 lbs.	—	—	—
1.5 lbs. and over	—	—	—

Quarterly Release

ANALYSIS OF PROCESSOR SALES
SHIPMENTS BY DISTANCE FROM PLANT
REGION

Distance Range	Pounds Shipped
Within 50 miles of plant	_____
50 - 100 miles from plant	_____
100 - 500 miles from plant	_____
More than 500 miles from plant	_____

ANALYSIS OF PROCESSOR SALES
PRICES RECEIVED FOR PROCESSED PRODUCT
REGION

Product	Median Reported (cents/lb.)
Dressed (pan ready)	_____
Dressed (pan ready), breaded	_____
Dressed (pan ready) _____	_____
Steaks	_____
Steaks, breaded	_____
Steaks _____	_____
Fillets	_____
Fillets, breaded	_____
Other: _____	_____
_____	_____
_____	_____
_____	_____

PROCESSORS
PRODUCTION-INVENTORY-SALES DATA

REGION

Month	Finished Processed	Cumulative Production	Ending Inventory	Change in Inventory	Net Sales ²	Prices Paid ³	Prices Received ⁴
	Product ₁	(in pounds)					(cents/lb.)
JAN	—	—	—	—	—	—	—
FEB	—	—	—	—	—	—	—
MAR	—	—	—	—	—	—	—
APR	—	—	—	—	—	—	—
MAY	—	—	—	—	—	—	—
JUNE	—	—	—	—	—	—	—
JULY	—	—	—	—	—	—	—
AUG	—	—	—	—	—	—	—
SEPT	—	—	—	—	—	—	—
OCT	—	—	—	—	—	—	—
NOV	—	—	—	—	—	—	—
DEC	—	—	—	—	—	—	—
TOTAL	—	—	—	—	—	—	—

¹Whole skinned, collarbone removed, tail on, individually frozen (or equivalent).

²Previous months inventory, plus current months production, less current months inventory.

³Range of most frequently reported prices paid to farmer, harvested, at plant site.

⁴Range of most frequently reported prices paid to farmer, f.o.b. processing plant or cold storage facility.

Annual Release

ESTIMATED WHOLESALE SALES OF CATFISH IN THE SOUTHERN
AND CENTRAL UNITED STATES,¹ BY REGION

Type of Product	Market Area			Total
	Southeastern	South Central	North Central	
(thousand pounds)				
Farm raised	_____	_____	_____	_____
Wild domestic	_____	_____	_____	_____
Imported	_____	_____	_____	_____
Unidentified	_____	_____	_____	_____
Total	_____	_____	_____	_____

¹SOUTHEASTERN - Carolinas, Georgia, Florida;

SOUTH CENTRAL - Alabama, Tennessee, Mississippi, Louisiana, Texas, Oklahoma, Arkansas;

NORTH CENTRAL - Missouri, Illinois, Iowa, Minnesota, Wisconsin, Michigan, Ohio, Indiana, Kentucky.

Annual Release

ESTIMATED WHOLESALE SALES OF CATFISH IN THE SOUTHERN
AND CENTRAL UNITED STATES,¹ BY REGION
AND TYPE MARKET

Type of Market	Market Area			
	Southeastern	South Central	North Central	Total
(thousand pounds)				
Restaurants	_____	_____	_____	_____
Food markets	_____	_____	_____	_____
Fish dealers	_____	_____	_____	_____
Other:	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
All other	_____	_____	_____	_____
Total	_____	_____	_____	_____

¹SOUTHEASTERN - Carolinas, Georgia, Florida;

SOUTH CENTRAL - Alabama, Tennessee, Mississippi, Louisiana, Texas, Oklahoma, Arkansas;

NORTH CENTRAL - Missouri, Illinois, Iowa, Minnesota, Wisconsin, Michigan, Ohio, Indiana, Kentucky.

Annual Release

WHOLESALE CATFISH SALES--BY REGION AND PRODUCT FORM
SURVEY RESPONSE

Product Form	Regions			
	Southeastern	South Central	North Central	Total
(in thousand pounds)				
Frozen	_____	_____	_____	_____
Fresh	_____	_____	_____	_____
Live	_____	_____	_____	_____
Total	_____	_____	_____	_____

Annual Release

WHOLESALE CATFISH SALES--BY PRODUCT FORM AND MARKET
SURVEY RESPONSE-- _____ REGION

Product Form	Markets			
	Restaurants	Food Markets	Fish Dealers	Other
(in thousand pounds)				
Pan ready	_____	_____	_____	_____
Steaks	_____	_____	_____	_____
Fillets	_____	_____	_____	_____
Other:	_____	_____	_____	_____
	_____	_____	_____	_____
All other	_____	_____	_____	_____
Total	_____	_____	_____	_____

Annual Release

WHOLESALE CATFISH SALES--BY PRODUCT FORM AND MARKET
SURVEY RESPONSE--ALL REGIONS

Product Form	Markets				Total
	Restaurants	Food Markets	Fish Dealers	Other	
(in thousand pounds)					
Pan ready	_____	_____	_____	_____	_____
Steaks	_____	_____	_____	_____	_____
Fillets	_____	_____	_____	_____	_____
Other:	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
All other	_____	_____	_____	_____	_____
Total	_____	_____	_____	_____	_____

WHOLESALE CATFISH SALES--BY PRODUCT FORM AND MARKET
 SURVEY RESPONSE-- _____ REGION

Markets	FRESH PRODUCT		FROZEN PRODUCT		TOTAL	
	Pounds (000)	Percent of Total Fresh	Pounds (000)	Percent of Total Frozen	Pounds (000)	Percent of Total
Restaurants	_____	_____	_____	_____	_____	_____
Supermarkets	_____	_____	_____	_____	_____	_____
Fish dealers	_____	_____	_____	_____	_____	_____
Other:	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
All other	_____	_____	_____	_____	_____	_____
Total	_____	_____	_____	_____	_____	_____

WHOLESALE CATFISH SALES--BY PRODUCT FORM AND MARKET
SURVEY RESPONSE--ALL REGIONS

Markets	FRESH PRODUCT		FROZEN PRODUCT		TOTAL	
	Pounds (000)	Percent of Total Fresh	Pounds (000)	Percent of Total Frozen	Pounds (000)	Percent of Total
Restaurants	_____	_____	_____	_____	_____	_____
Supermarkets	_____	_____	_____	_____	_____	_____
Fish dealers	_____	_____	_____	_____	_____	_____
Other:	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
All other	_____	_____	_____	_____	_____	_____
Total	_____	_____	_____	_____	_____	_____

Annual Release

WHOLESALE CATFISH SALES--BY PRODUCT FORM
SURVEY RESPONSE-- _____ REGION

Product Form	Fresh	Frozen	Total
	(thousand pounds)		
Pan ready	_____	_____	_____
Steaks	_____	_____	_____
Fillets	_____	_____	_____
Whole	_____	_____	_____
Other:	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
All other	_____	_____	_____
Total	_____	_____	_____

Annual Release

WHOLESALE CATFISH SALES--BY PRODUCT FORM
SURVEY RESPONSE--ALL REGIONS

<u>Product Form</u>	<u>Fresh</u>	<u>Frozen</u>	<u>Total</u>
(thousand pounds)			
Pan ready	_____	_____	_____
Steaks	_____	_____	_____
Fillets	_____	_____	_____
Whole	_____	_____	_____
Other:	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
All other	_____	_____	_____
Total	_____	_____	_____

WHOLESALE CATFISH SALES TO RESTAURANTS--BY PRODUCT FORM
 SURVEY RESPONSE BY _____ REGION

Type Product	FRESH PRODUCT		FROZEN PRODUCT		TOTAL	
	Pounds (000)	Percent of Total Fresh	Pounds (000)	Percent of Total Frozen	Pounds (000)	Percent of Total
Pan ready	_____	_____	_____	_____	_____	_____
Steaks	_____	_____	_____	_____	_____	_____
Fillets	_____	_____	_____	_____	_____	_____
Other:	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
All other	_____	_____	_____	_____	_____	_____
Total	_____	_____	_____	_____	_____	_____

WHOLESALE CATFISH SALES TO FOOD MARKETS -- BY PRODUCT FORM
 SURVEY RESPONSE BY _____ REGION

Type Product	Pounds (000)	FRESH PRODUCT		FROZEN PRODUCT		TOTAL Pounds (000)	Percent of Total
		Fresh	Percent of Total	Frozen	Percent of Total		
Pan ready	_____	_____	_____	_____	_____	_____	_____
Steaks	_____	_____	_____	_____	_____	_____	_____
Fillets	_____	_____	_____	_____	_____	_____	_____
Other:	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____
All other	_____	_____	_____	_____	_____	_____	_____
Total	_____	_____	_____	_____	_____	_____	_____

WHOLESALE CATFISH SALES TO FISH DEALERS--BY PRODUCT FORM
 SURVEY RESPONSE BY _____ REGION

Type	Product	FRESH PRODUCT		FROZEN PRODUCT		TOTAL	
		Pounds (000)	Percent of Total Fresh	Pounds (000)	Percent of Total Frozen	Pounds (000)	Percent of Total
Pan ready		_____	_____	_____	_____	_____	_____
Steaks		_____	_____	_____	_____	_____	_____
Fillets		_____	_____	_____	_____	_____	_____
Other:		_____	_____	_____	_____	_____	_____
All other		_____	_____	_____	_____	_____	_____
Total		_____	_____	_____	_____	_____	_____

WHOLESALE CATFISH SALES TO OTHER DEALERS--BY PRODUCT FORM
SURVEY RESPONSE BY _____ REGION

Type Product	Pounds (000)	FRESH PRODUCT		FROZEN PRODUCT		TOTAL Pounds (000)	Percent of Total Pounds (000)
		Percent of Total Fresh	Pounds (000)	Percent of Total Frozen	Pounds (000)		
Pan ready	_____	_____	_____	_____	_____	_____	_____
Steaks	_____	_____	_____	_____	_____	_____	_____
Fillets	_____	_____	_____	_____	_____	_____	_____
Other:	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____
All other	_____	_____	_____	_____	_____	_____	_____
Total	_____	_____	_____	_____	_____	_____	_____

WHOLESALE CATFISH SALES TO RESTAURANTS--BY PRODUCT FORM
SURVEY RESPONSE BY ALL REGIONS

Type	Product	FRESH PRODUCT		FROZEN PRODUCT		TOTAL	
		Pounds (000)	Percent of Total Fresh	Pounds (000)	Percent of Total Frozen	Pounds (000)	Percent of Total
Pan ready		_____	_____	_____	_____	_____	_____
Steaks		_____	_____	_____	_____	_____	_____
Fillets		_____	_____	_____	_____	_____	_____
Other:		_____	_____	_____	_____	_____	_____
All other		_____	_____	_____	_____	_____	_____
Total		_____	_____	_____	_____	_____	_____

WHOLESALE CATFISH SALES TO FOOD MARKETS--BY PRODUCT FORM
SURVEY RESPONSE BY ALL REGIONS

Type Product	Pounds (000)	FRESH PRODUCT		FROZEN PRODUCT		TOTAL Pounds (000)	Percent of Total
		Fresh	Percent of Total	Frozen	Percent of Total		
Pan ready	_____	_____	_____	_____	_____	_____	_____
Steaks	_____	_____	_____	_____	_____	_____	_____
Fillets	_____	_____	_____	_____	_____	_____	_____
Other:	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____
All other	_____	_____	_____	_____	_____	_____	_____
Total	_____	_____	_____	_____	_____	_____	_____

WHOLESALE CATFISH SALES TO FISH DEALERS--BY PRODUCT FORM
SURVEY RESPONSE BY ALL REGIONS

Type	Product	FRESH PRODUCT		FROZEN PRODUCT		TOTAL Pounds (000)	Percent of Total (000)	Percent of Total
		Pounds (000)	Percent of Total Fresh	Pounds (000)	Percent of Total Frozen			
Pan ready								
Steaks								
Fillets								
Other:								
All other								
Total								

WHOLESALE CATFISH SALES TO OTHER DEALERS--BY PRODUCT FORM
SURVEY RESPONSE BY ALL REGIONS

Type Product	Pounds (000)	FRESH PRODUCT		FROZEN PRODUCT		TOTAL Pounds (000)
		Percent of Total Fresh	Percent of Total Frozen	Percent of Total Frozen	Percent of Total Frozen	
Pan ready	_____	_____	_____	_____	_____	_____
Steaks	_____	_____	_____	_____	_____	_____
Fillets	_____	_____	_____	_____	_____	_____
Other:	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
All other	_____	_____	_____	_____	_____	_____
Total	_____	_____	_____	_____	_____	_____

Annual Release

REPORTED WHOLESALE PRICES RECEIVED
PRICE RANGES BY PRODUCT FORM AND PRODUCT TYPE
SURVEY RESPONSE

Product Type	PRODUCT FORM			
	Pan Ready	Steaks (cents per pound)	Fillets	Whole
<u>Farm Raised</u>				
High range	—	—	—	—
Low range	—	—	—	—
Average range	—	—	—	—
<u>Domestic Wild</u>				
High range	—	—	—	—
Low range	—	—	—	—
Average range	—	—	—	—
<u>Imported</u>				
High range	—	—	—	—
Low range	—	—	—	—
Average range	—	—	—	—

WHOLESALE CATFISH SALES--BY SIZE RANGE AND REGION
SURVEY RESPONSE¹

Size Range	REGIONS						(000)	
	Southeastern		South Central		North Central			
	% of Region Total	Pounds	% of Region Total	Pounds	% of Region Total	Pounds		
Under 6 ozs.	—	—	—	—	—	—	—	
6 ozs. to under 8 ozs.	—	—	—	—	—	—	—	
8 ozs. to under 10 ozs.	—	—	—	—	—	—	—	
10 ozs. to under 12 ozs.	—	—	—	—	—	—	—	
12 ozs. to under 14 ozs.	—	—	—	—	—	—	—	
14 ozs. to under 16 ozs.	—	—	—	—	—	—	—	
1 lb. to under 1 1/2 lbs.	—	—	—	—	—	—	—	
1 1/2 lbs. and over	—	—	—	—	—	—	—	
Total	—	—	—	—	—	—	—	

¹Survey questions answered by ____ of ____ respondents.

WHOLESALEERS' SUPPLY OF FISH--BY TYPE AND REGION
SURVEY RESPONSE

Type Supply	REGIONS						Total Regions % of Total	
	Southeastern		South Central		North Central			
	% of Region	Total Pounds (000)	% of Region	Total Pounds (000)	% of Region	Total Pounds (000)		
Farm raised	—	—	—	—	—	—	—	
Domestic wild	—	—	—	—	—	—	—	
Imported	—	—	—	—	—	—	—	
Unidentified	—	—	—	—	—	—	—	
Total	—	—	—	—	—	—	—	

WHOLESALERS' SOURCES OF CATFISH--BY REGION
SURVEY RESPONSE

Sources	REGIONS						Total Regions % of Regional Total (000)	Pounds (000)	Pounds (000)	Total Regions % of Regional Total (000)				
	Southeastern		South Central		North Central									
	% of Regional Total	Pounds (000)	% of Regional Total	Pounds (000)	% of Regional Total	Pounds (000)								
Fish farms	—	—	—	—	—	—	—	—	—	—				
Live haulers	—	—	—	—	—	—	—	—	—	—				
Brokers	—	—	—	—	—	—	—	—	—	—				
Commercial fishermen	—	—	—	—	—	—	—	—	—	—				
Processing plants	—	—	—	—	—	—	—	—	—	—				
Other:	—	—	—	—	—	—	—	—	—	—				
All other	—	—	—	—	—	—	—	—	—	—				
Total	—	—	—	—	—	—	—	—	—	—				

Annual Release

DESTINATION OF REPORTED HAULS
LIVE FARM-RAISED CATFISH
LIVE HAULER SURVEY

State	Pounds	Percent of Total Pounds
Arkansas	_____	_____
Illinois	_____	_____
Indiana	_____	_____
Kansas	_____	_____
Kentucky	_____	_____
Missouri	_____	_____
Ohio	_____	_____
Texas	_____	_____
* * *	_____	_____
* * *	_____	_____
* * *	_____	_____
All other	_____	_____
Total	_____	_____

Annual Release

PRICES PAID BY LIVE HAULERS FOR
DOMESTIC WILD CATFISH
LIVE HAULER SURVEY

	High	Low	Median
(cents per pound)			
High	_____	_____	_____
Low	_____	_____	_____
Most frequent	_____	_____	_____

Annual Release

PRICES PAID BY LIVE HAULERS FOR
FARM-RAISED CATFISH
LIVE HAULER SURVEY

	High	Low	Median
(cents per pound)			
High	_____	_____	_____
Low	_____	_____	_____
Most frequent	_____	_____	_____

Annual Release

CLASSIFICATION OF HAULS
LIVE WILD DOMESTIC CATFISH
LIVE HAULER SURVEY

Classification	Pounds	Percent of Total Pounds
Fish purchased for resale	_____	_____
Fee hauls	_____	_____
Total	_____	_____

Annual Release

CLASSIFICATION OF HAULS
LIVE FARM-RAISED CATFISH
LIVE HAULER SURVEY

Classification	Pounds	Percent of Total Pounds
Own product (from haulers ponds)	_____	_____
Fish purchased for resale	_____	_____
Fee hauls	_____	_____
Total	_____	_____

Annual Release

DISPOSITION OF WILD DOMESTIC CATFISH BY LIVE HAULERS
LIVE HAULER SURVEY

Market	Pounds	Percent of Total Pounds
Pay lakes	_____	_____
Farm ponds	_____	_____
Other	_____	_____
	_____	_____
Total	_____	_____
	_____	_____

Annual Release

DISPOSITION OF FARM-RAISED CATFISH BY LIVE HAULERS
LIVE HAULER SURVEY

Market	Pounds	Percent of Total Pounds
Pay lakes	_____	_____
Farm ponds	_____	_____
Other	_____	_____
	_____	_____
Total	_____	_____
	_____	_____

APPENDIX B
SURVEY QUESTIONNAIRE FORMS

Where Budget Bureau Numbers are Shown on Certain Forms Herein,
They Were Approved for One-Time Use Only

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National Marine Fisheries Service
National Oceanic and Atmospheric Administration
United States Department of Commerce

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COMMERCIAL CATFISH SURVEY

Name _____ Date _____

Street or RFD _____ Telephone No. _____

Town _____ State _____ Zip Code _____

1. Do you produce catfish for sale? Yes No
2. Do you produce catfish in reservoirs or ponds? Yes No
If yes, how many acres of surface water did you have in catfish production in 1971?
_____ acres
3. Do you produce catfish in cages? Yes No
If yes, how many cages did you have in catfish production in 1971?
_____ cages
4. Do you produce catfish in raceways? Yes No
If yes, how many linear feet of raceway did you have in catfish production in 1971?
_____ linear feet
5. Do you produce catfish fingerlings? Yes No

Please fill out and return this questionnaire, regardless of whether or not you are a commercial producer of catfish, in the enclosed self-addressed envelope, no postage is necessary.

Thank you for your cooperation.

National Marine Fisheries Service
National Oceanic and Atmospheric Administration
United States Department of Commerce

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COMMERCIAL CATFISH SURVEY
PRODUCTION ESTIMATE

Name _____ Date _____

Street or RFD _____ Phone No. _____

Town _____ County _____ State _____

1. Do you produce foodsize catfish for sale? Yes No
2. Do you produce foodsize catfish in raceways? Yes No
3. Do you produce foodsize catfish in cages? Yes No
4. Do you produce catfish fingerlings? Yes No
5. How many acres of surface water in reservoirs did you have in commercial foodsize catfish production in 1971? _____ acres
6. How many acres of surface water in reservoirs did you have stocked for commercial catfish production on January 1, 1972? _____ acres
7. For all acres of surface water in reservoirs you had stocked for commercial foodsize catfish production on January 1, 1972, please give the following information by month of stocking:

Month/year Stocked	Acres of Surface Water Stocked During the Month	Number of Fingerlings Per Acre	Size of Fingerling - inches -	When do you plan to harvest? - month/year -
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

8. How many acres of surface water do you plan to stock with catfish fingerlings for commercial production in 1972? _____ acres
9. For all acres of surface water you plan to stock for commercial foodsize catfish production during the calendar year of 1972, please give the following information:

Month/year Stocked	Acres of Surface Water Stocked During the Month	Number of Fingerlings Per Acre	Size of Fingerling - inches -	When do you plan to harvest? - month/year -

Comments _____

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United States Department of Commerce

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COMMERCIAL CATFISH SURVEY CAGE PRODUCTION ESTIMATE

Name _____ Date _____

Date _____

Street or RFD _____ Phone No. _____

Phone No. _____

Town _____ County _____ State _____

County _____ State _____

1. How many cages do you have in commercial catfish production? _____ cages
 2. What is the average size of your cages? Number of feet long _____; number of feet wide _____; and number of feet deep _____.
 3. How many cages did you have stocked for commercial foodsize catfish production on January 1, 1972? _____ cages
 4. For all cages you had in commercial catfish production on January 1, 1972, please give the following information by month of stocking:

5. How many cages do you plan to stock with catfish fingerlings for commercial production during 1972? _____ cages

 6. For all cages you plan to stock with catfish fingerlings for commercial production during 1972, please give the following information by month of stocking:

7. Do you produce foodsize catfish in reservoirs or ponds? Yes No

8. Do you produce foodsize catfish in raceways? Yes No

9. Do you produce catfish fingerlings? Yes No

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United States Department of Commerce

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COMMERCIAL CATFISH SURVEY RACEWAY PRODUCTION ESTIMATE

Name _____ Date _____

Date _____

Street or RFD _____ Phone No. _____

Phone No. _____

Town _____ County _____ State _____

County _____ State _____

1. How many raceways do you have in commercial catfish production? _____ raceways
 2. How many linear feet do you have in raceways? _____ feet
 3. What is the average width of your raceways? _____ feet wide
 4. What is the average depth of your raceways? _____ feet deep
 5. How many linear feet of raceways did you have stocked for commercial foodsize catfish production on January 1, 1972? _____ feet
 6. For all linear feet of raceways you had in commercial catfish production on January 1, 1972, please give the following information by month of stocking:

7. How many linear feet of raceway do you plan to stock with catfish fingerlings for commercial production during 1972? _____ feet

 8. For all linear feet of raceways you plan to stock with catfish fingerlings for commercial production during 1972, please give the following information by month of stocking:

9. Do you produce foodsize catfish in reservoirs or ponds? Yes No

10. Do you produce foodsize catfish in cages? Yes No

11. Do you produce catfish fingerlings? Yes No

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COMMERCIAL CATFISH SURVEY
PRODUCTION ESTIMATE REPORT
RESERVOIR PRODUCERS

Name _____ Phone No. _____

Street or RFD _____

Town _____ County _____ State _____

1. How many acres of surface water have you stocked for commercial catfish production since January 1, 1972? _____ acres
2. For each reservoir stocked for commercial production since January 1, 1972, please give the following information:

	Date Stocked - month -	Acres of Surface Water in Reservoir	Number of Fingerlings - per acre -	Size of Fingerling - inches -	When do you plan to harvest? - month/year -
1.	_____	_____	_____	_____	_____
2.	_____	_____	_____	_____	_____
3.	_____	_____	_____	_____	_____
4.	_____	_____	_____	_____	_____
5.	_____	_____	_____	_____	_____
6.	_____	_____	_____	_____	_____
3. Comments	_____				

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National Oceanic and Atmospheric Administration
United States Department of Commerce

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COMMERCIAL CATFISH SURVEY
PRODUCTION ESTIMATE REPORT
CAGE PRODUCERS

Name _____ Phone No. _____

Street or RFD _____

Town _____ County _____ State _____

1. How many cages have you stocked for commercial catfish production since January 1, 1972? _____ cages
2. For all cages stocked for commercial catfish production since January 1, 1972, please give the following information by months:

Month	No. of Cages Stocked During Month	Number of Fingerlings Stocked During Month	Size of Fingerling - inches -	When do you plan to harvest? - month/year -
January	_____	_____	_____	_____
February	_____	_____	_____	_____
March	_____	_____	_____	_____
April	_____	_____	_____	_____
May	_____	_____	_____	_____
June	_____	_____	_____	_____
3. Comments	_____	_____	_____	_____
	_____	_____	_____	_____
	_____	_____	_____	_____
	_____	_____	_____	_____
	_____	_____	_____	_____

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National Oceanic and Atmospheric Administration
United States Department of Commerce

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COMMERCIAL CATFISH SURVEY
PRODUCTION ESTIMATE REPORT
RACEWAY PRODUCERS

Name _____ Phone No. _____

Street or RFD _____

Town _____ County _____ State _____

1. How many linear feet of raceways have you stocked for commercial catfish production since January 1, 1972? _____ feet
2. For all linear feet of raceways stocked for commercial catfish production since January 1, 1972, please give the following information by month:

Month 1972	No. of Linear Ft. of Raceway Stocked in Month	Number of Fingerlings Stocked During the Month	Size of Fingerling - inches -	When do you plan to harvest? - month/year -
January	_____	_____	_____	_____
February	_____	_____	_____	_____
March	_____	_____	_____	_____
April	_____	_____	_____	_____
May	_____	_____	_____	_____
June	_____	_____	_____	_____
3. Comments	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

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**COMMERCIAL CATFISH SURVEY
RESERVOIR PRODUCERS
QUARTERLY MARKET REPORT**
JANUARY, FEBRUARY AND MARCH, 1972

Name _____ Phone No. _____

Street or RFD _____

Town _____ County _____ State _____

1. How many acres of surface water did you have in foodsize catfish production in 1971?
_____ acres
 2. How many acres of surface water of foodsize catfish did you harvest during January, February and March 1972? _____ acres
 3. Please give the following market information for the catfish sold during January, February and March 1972:

¹Processor, live hauler, broker, pay lake operator, eating establishment, individual consumer, other (please specify) _____.

If the information is not available, please indicate the reason: no sales during period ,
noncommercial producer , not yet in production , no longer in business ,
others (please specify)

Comments:

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National Oceanic and Atmospheric Administration
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COMMERCIAL CATFISH SURVEY
CAGE PRODUCERS
QUARTERLY MARKET REPORT
JANUARY, FEBRUARY AND MARCH, 1972

Name _____ Phone No. _____

Street or RFD _____

Town _____ County _____ State _____

1. How many cages of foodsize catfish did you harvest during January, February, and March, 1972? _____ cages
 2. Please give the following market information for the catfish you sold during January, February and March, 1972.

¹Processor, live hauler, broker, pay lake operator, eating establishment, individual consumer, other (please specify) _____.

If the information is not available, please indicate the reason: no sales during the period _____, noncommercial producer _____, not yet in business _____, others _____ (please specify) _____

Comments: _____

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**COMMERCIAL CATFISH SURVEY
RACEWAY PRODUCERS
QUARTERLY MARKET REPORT
JANUARY, FEBRUARY, MARCH, 1972**

Name _____ Phone No. _____

Street or RFD _____

Town _____ County _____ State _____

1. How many linear feet of raceway have you stocked for commercial catfish production since January 1, 1972? _____ linear feet
 2. Please give the following market information for the catfish you sold during January, February and March, 1972:

¹Processor, live hauler, broker, pay lake operator, eating establishment, individual consumer, other (please specify)

If the information is not available, please indicate the reason: no sales during period ,
noncommercial producer , not yet in production , no longer in business ,
others , (please specify)

Comments:

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National Oceanic and Atmospheric Administration
United States Department of Commerce

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COMMERCIAL CATFISH SURVEY
FINGERLING REPORT

Name _____ Telephone No. _____

Street or R. F. D. _____

Town _____ County _____ State _____

1. How many surface water acres of fingerlings did you produce in 1971? _____ acres.
2. How many female broodfish (spawners) did you have in 1971? _____ number.
3. Would you estimate the number of fingerlings you produced per female broodfish in 1971? _____ fingerlings.
4. How many acres of fingerlings did you have on January 1, 1972? _____ acres.
5. How many female broodfish (spawners) did you have on January 1, 1972? _____ number.
6. Would you estimate the average weight of your female broodfish? _____ lbs.
7. Would you estimate the number of fingerlings you had on January 1, 1972? Under 6" in length _____, 6" & over in length _____.
8. How many surface water acres do you plan to have in fingerling production during 1972? _____ acres.
9. How many female broodfish (spawners) do you plan to keep for fingerling production in 1972? _____.
10. How many of the fingerlings that you produced did you stock in your foodfish operation in 1971? _____.

11. Please give the number of fingerlings you sold during 1971 by price received and size.

Size - inches -	Under 2¢	3¢	4¢	5¢	6¢	7¢	8¢	9¢	10¢ & over
Under 4	_____	_____	_____	_____	_____	_____	_____	_____	_____
4 - 6	_____	_____	_____	_____	_____	_____	_____	_____	_____
6 - 8	_____	_____	_____	_____	_____	_____	_____	_____	_____
8 - 10	_____	_____	_____	_____	_____	_____	_____	_____	_____
Over 10	_____	_____	_____	_____	_____	_____	_____	_____	_____

12. Do you produce foodsize catfish for sale? Yes No

Report Month: _____

MONTHLY REPORT OF CATFISH PROCESSORS
CATFISH INDUSTRY

Name of Processor: _____

Address: _____

Name and title of individual completing report: _____

Approximate daily employment for month: _____

1. Farm raised catfish processed during the month (pounds, processed weight):
_____ pounds.
2. Inventory of processed farm raised catfish, end of month: _____ pounds.
3. Prices paid to farmers for catfish during the month (harvested, at plant site):
High: _____ ¢/lb. Low: _____ ¢/lb. Most Frequent: _____ ¢/lb.
4. If production included other than farm raised catfish, please identify by type and indicate total production by weight:

Type _____ Pounds

5. Please indicate what percent of your total catfish sales (based on weight) were in each of the following categories:

Frozen: _____ % Fresh: _____ % Live: _____ %

6. What percent of your total FROZEN catfish sales (based on weight) were in each of the following forms:

Pan ready (fish skinned, head off, eviscerated)	_____ %
Portions: Steaks	_____ %
Fillets	_____ %
Other (specify) _____	_____ %
Total	100 %

7. What percent of your total FRESH catfish sales (based on weight) were in each of the following forms:

Pan ready (fish skinned, head off, eviscerated)	_____ %
Portions: Steaks	_____ %
Fillets	_____ %
Other (specify) _____	_____ %
Total	100 %

8. Please show the percent of total FROZEN catfish sales (based on weight) to each of the market outlets listed below by product form:

FORM	PERCENTAGE OF SALES TO:					Total
	Restaurants	Food Markets	Fish Wholesalers	Other, Specify		
Dressed	%	%	%	%	%	100%
Steaks	%	%	%	%	%	100%
Fillets	%	%	%	%	%	100%
Whole	%	%	%	%	%	100%
Other	%	%	%	%	%	100%

9. Please show the percent of total FRESH catfish sales (based on weight) to each of the market outlets listed below by product form:

FORM	PERCENTAGE OF SALES TO:					Total
	Restaurants	Food Markets	Fish Wholesalers	Other, Specify		
Dressed	%	%	%	%	%	100%
Steaks	%	%	%	%	%	100%
Fillets	%	%	%	%	%	100%
Whole	%	%	%	%	%	100%
Other	%	%	%	%	%	100%

10. What percent of your total sales (based on weight) of pan ready catfish (frozen and fresh) were in each of the following size classes:

Less than 8 oz.	%	1 lb. to under 1 1/2 lb.	%
8 oz. to under 12 oz.	%	1 1/2 lb. and over	%
12 oz. to under 16 oz.	%	Total	100 %

11. Please report the weight ranges of catfish preferred by your various types of customers:

Restaurants	_____	Fish dealers	_____
Food markets	_____	Other	_____

12. Please report the most frequent prices per pound received for processed products.

Dressed (pan ready)	¢/lb.	Fillets	¢/lb.
Dressed (pan ready), breaded	¢/lb.	Fillets, breaded	¢/lb.
Dressed (pan ready)	¢/lb.	Fillets	¢/lb.
Steaks	¢/lb.	_____	¢/lb.
Steaks, breaded	¢/lb.	_____	¢/lb.
Steaks	¢/lb.	_____	¢/lb.

13. What percent of total catfish sales by weight are to customers located within the following distances from your plant:

Within 50 miles	%
50 - 100 miles	%
100 - 500 miles	%
More than 500 miles	%
Total	100 %

WHOLESALE CATFISH MARKET QUESTIONNAIRE

1. Do you sell catfish? YES _____ NO _____

If NO, please skip to numbers 15 and 17.

If YES, please indicate your approximate volume of catfish sales during the past 12-month period ending _____ (month).

Pounds (Dressed Weight): _____ Dollars: _____

2. What change in your volume of catfish sales do you expect during the 12-month period beginning in _____ (month)?

_____ % increase _____ % decrease No change _____ %

THE FOLLOWING QUESTIONS PERTAIN TO YOUR FIRMS' ACTIVITIES DURING THE 12-MONTH PERIOD ENDING
 _____ (MONTH).

3. What percent of your total of fin fish sales (based on weight) did catfish represent during the year? _____ %.

4. Please indicate what percent of your total catfish sales (based on weight) were in the following form:

FROZEN: _____ %	FRESH: _____ %	LIVE: _____ %	TOTAL <u><u>100%</u></u>
-----------------	----------------	---------------	--------------------------

5. What percent of your total FROZEN catfish sales (based on weight) were in the following form:

Dressed (pan ready) _____ %	Fillets _____ %	_____ %
Steaks _____ %	Other, specify _____	_____ %
TOTAL		100%

6. What percent of your total FRESH catfish sales (based on weight) were in the following form:

Dressed (pan ready) _____ %	Fillets _____ %	_____ %
Steaks _____ %	Other, specify _____	_____ %
TOTAL		100%

7. Please show what percent of total FROZEN catfish sales by weight were to each of the market outlets listed for each product form:

PERCENT OF SALES TO:					
FORM	RESTAURANTS	FOOD MARKETS	FISH DEALERS	OTHER, SPECIFY	TOTAL
Dressed, pan ready	%	%	%	%	100%
Steaks	%	%	%	%	100%
Fillets	%	%	%	%	100%
Other	%	%	%	%	100%

8. Please show what percent of total FRESH catfish sales by weight were to each of the market outlets listed for each product form:

PERCENT OF SALES TO:					
FORM	RESTAURANTS	FOOD MARKETS	FISH DEALERS	OTHER, SPECIFY	TOTAL
Dressed, pan ready	%	%	%	%	100%
Steaks	%	%	%	%	100%
Fillets	%	%	%	%	100%
Other	%	%	%	%	100%

9. What percent of your total catfish sales (based on weight) were in each of the following size classes:

Under 6 ozs.	%	12 ozs. to under 14 ozs.	%
6 ozs. to under 8 ozs.	%	14 ozs. to under 16 ozs.	%
8 ozs. to under 10 ozs.	%	1 lb. to under 1½ lbs.	%
10 ozs. to under 12 ozs.	%	1½ lbs. and over	%
		Total	100%

10. Please enter below the size of catfish (dressed weight) preferred by your various type of customers.

Restaurants	_____	Fish Dealers	_____
Food Markets	_____	Other, specify	_____

11. What percent of total catfish sales (based on weight) were to customers located within the following distance from your firm?

FRESH AND FROZEN SHIPMENTS		LIVE SHIPMENTS	
Within 25 miles	%	Within 25 miles	%
25 to 50 miles	%	25 to 50 miles	%
More than 50 miles	%	More than 50 miles	%
Total	100%	Total	100%

12. Please indicate the percent of your catfish supply (based on weight) obtained directly from the following sources:

Fish farms	%	Commercial fishermen	%
Live haulers	%	Processing plant	%
Brokers	%	Other, specify	%
		Total	100%

13. Please indicate the percent that each kind of catfish purchased (based on weight) is to total purchases.

Farm raised	%	Domestic wild	%	Imported	%
-------------	---	---------------	---	----------	---

14. Please indicate typical price ranges you paid (per pound) for each of the following product forms, by type of catfish.

PRODUCT FORM					
Type Fish	Steaks	Fillets	Whole	Dressed	
Farm raised	\$ to \$				
Domestic wild	\$ to \$				
Imported	\$ to \$				

15. By lowering your selling price could you significantly increase sales of farm raised catfish? YES _____ NO _____

If YES, how much price reduction would be necessary to accomplish this for a TOP QUALITY product?

from _____¢ to _____¢ per pound.

16. Do you freeze catfish? YES _____ NO _____. If YES, how much frozen during the 12-month period referred to in question No. 1? _____ pounds.

17. COMMENTS: _____

NAME AND TITLE OF PERSON COMPLETING FORM: _____

NAME OF COMPANY: _____

MAILING ADDRESS: _____

DESCRIPTION OF BUSINESS: _____

USUAL NUMBER OF EMPLOYEES: _____

SURVEY OF LIVE HAULERS OF CATFISH

1. Do you haul mature live catfish: Yes ____ No _____. (If No, please furnish identification information at the end of the form and return in the stamped envelope furnished).

2. Please indicate the estimated number of pounds hauled during the 12-month period ending in December 31, 1970.

Farm-raised catfish: _____ lb. Domestic wild catfish: _____ lb.

3. What percent change in your haul volume do you expect during the 12-month period beginning in _____ (month).

Farm raised: _____ % increase _____ % decrease No change _____

Domestic wild: _____ % increase _____ % decrease No change _____

4. Please indicate the number of hauling rigs and capacities (in pounds of fish) of each, now available for use by your firm:

THE FOLLOWING QUESTION PERTAINS TO YOUR FIRM'S ACTIVITIES DURING THE 12-MONTH PERIOD ENDING IN DECEMBER 31, 1970.

5. Regarding hauls of farm raised catfish only, please indicate the approximate percent that each of the following classes was of total pounds hauled.

Own product (from your own ponds)	_____ %
Fish purchased by you for resale	_____ %
Job hauls (a fee was charged for hauling)	_____ %
Other (specify) _____	_____ %
Total	100 %

6. Regarding hauls of domestic wild catfish only, please indicate the approximate percent that each of the following classes was of total pounds hauled.

Fish purchased by you for resale	_____ %
Job hauls (a fee was charged for hauling)	_____ %
Other (specify) _____	_____ %
Total	100 %

7. If you purchased either farm-raised or domestic wild catfish for resale, please indicate prices paid.

Farm raised: High _____¢/lb. Low _____¢/lb. Most frequent _____¢/lb.

Domestic wild: High _____¢/lb. Low _____¢/lb. Most frequent _____¢/lb.

8. Please indicate destination of hauls (for five most important states, and all other states combined) and approximate percent of total poundage hauled to each state.

Farm-Raised Catfish		Domestic Wild Catfish	
<u>State</u>	<u>Percent</u>	<u>State</u>	<u>Percent</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
All Other States	_____	All Other States	_____
Total	100 %	Total	100 %

9. What percent of total pounds hauled were to each of the following:

Farm-Raised Catfish:		Domestic Wild Catfish:	
Pay Lakes	%	Pay Lakes	%
Farm Ponds	%	Farm Ponds	%
Other (specify) _____	_____ %	Other (specify) _____	_____ %
_____	_____ %	_____	_____ %
_____	_____ %	_____	_____ %
Total	100 %	Total	100 %

10. COMMENTS: _____

NAME AND TITLE OF PERSON COMPLETING FORM: _____

NAME OF COMPANY: _____

MAILING ADDRESS: _____

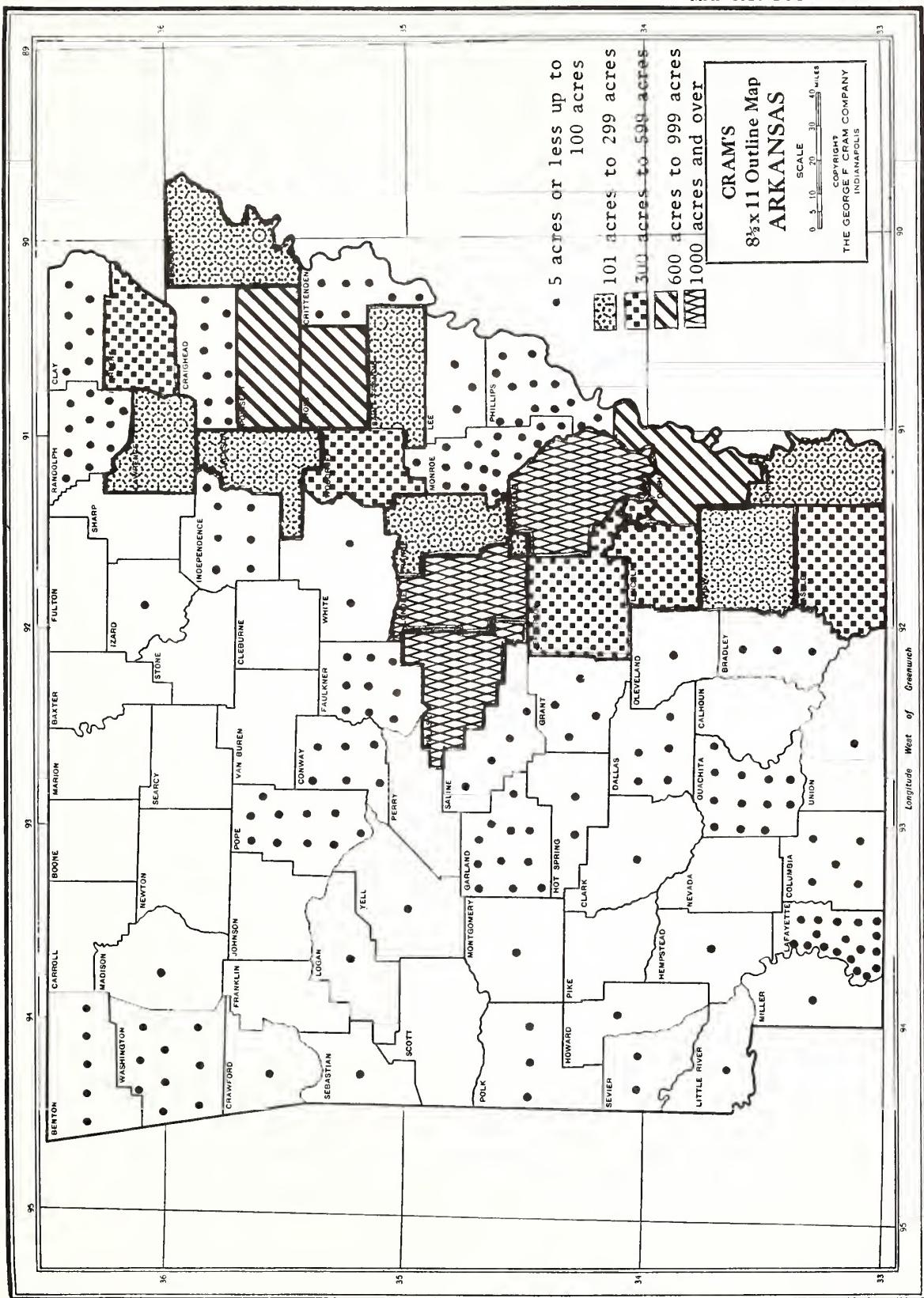
NATURE OF PRIMARY BUSINESS: _____

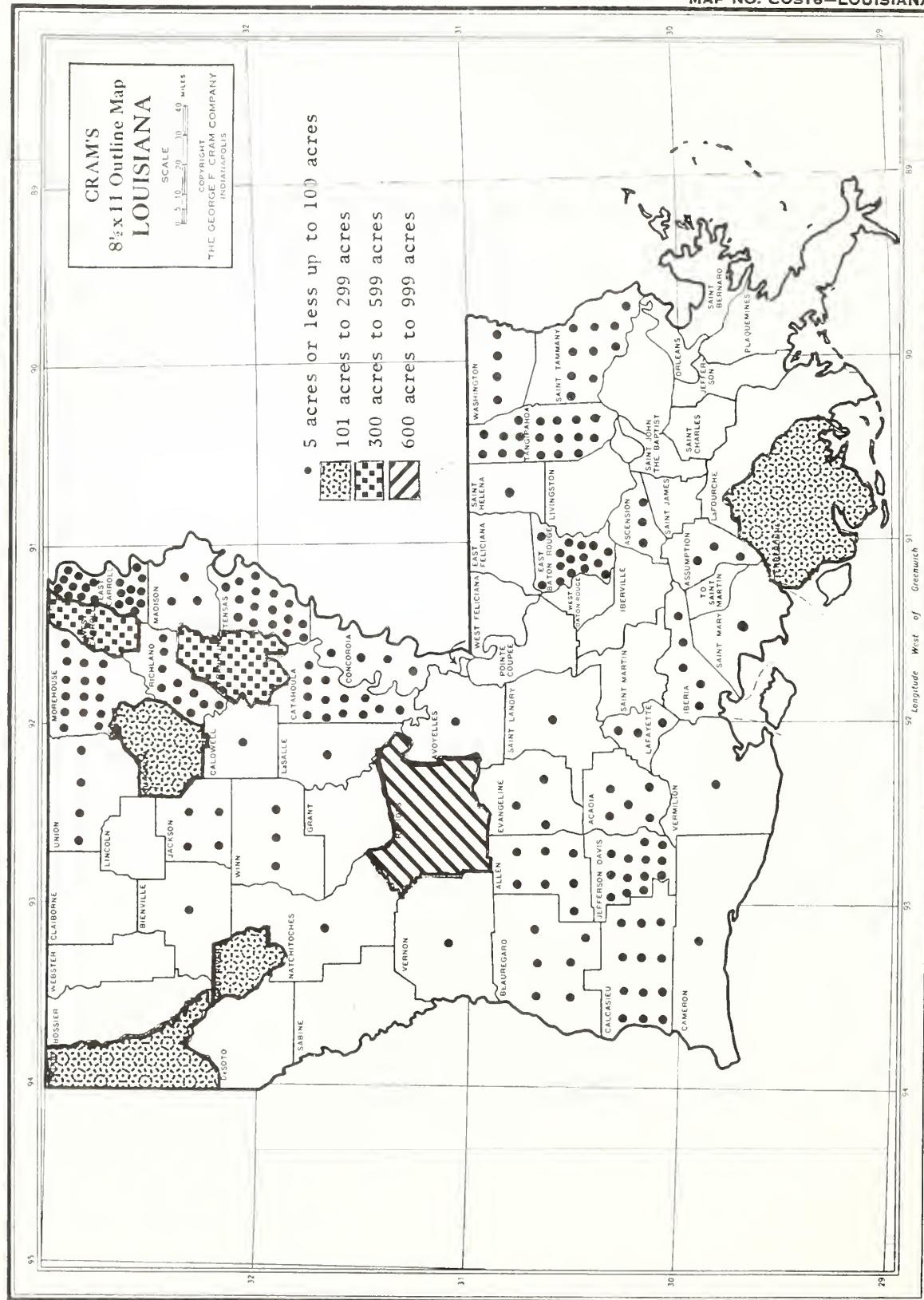
DATE: _____

APPENDIX C

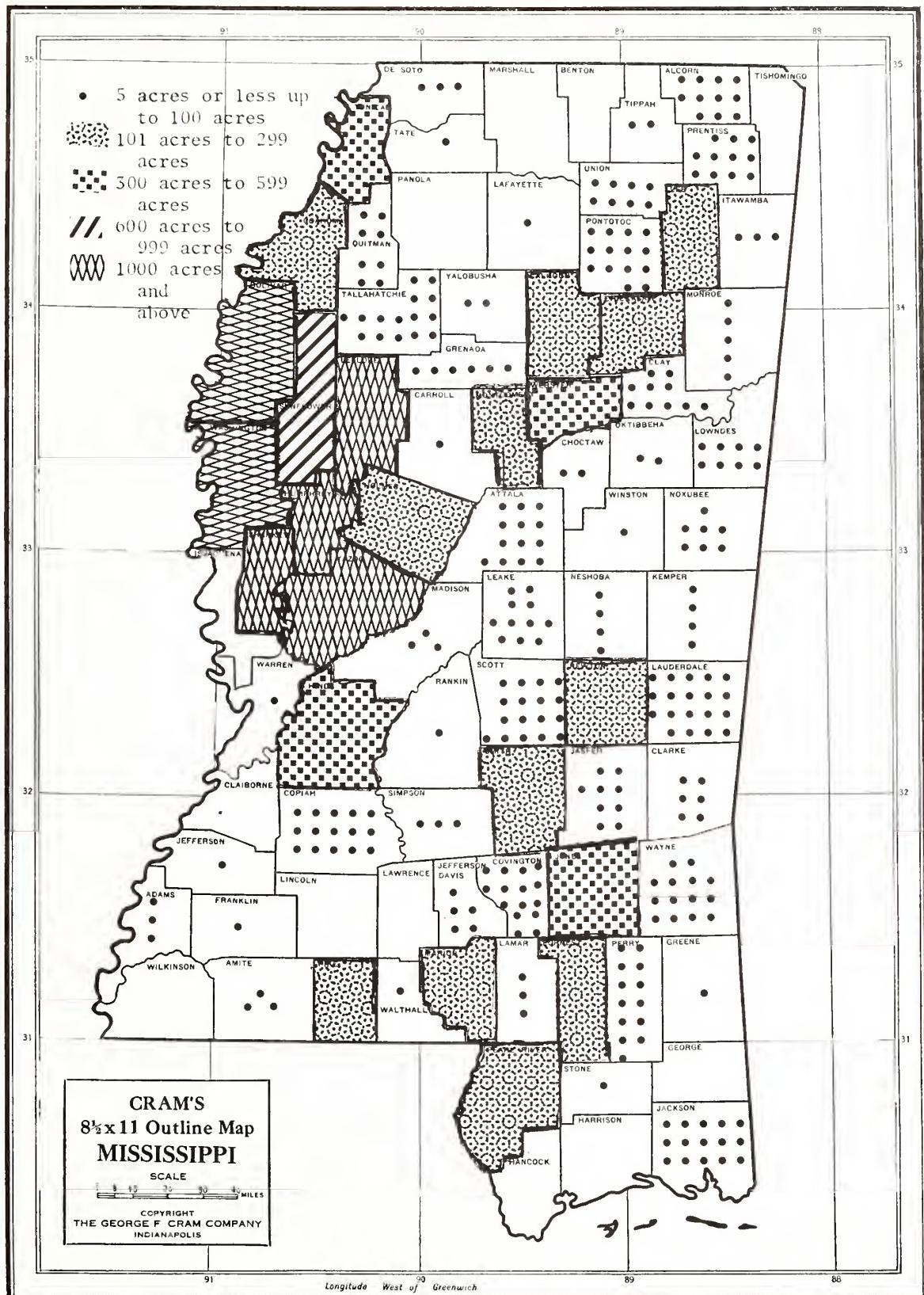
STATE PRODUCTION DENSITY MAPS FOR FOODSIZE CATFISH, 1970

Arkansas	Michigan
Louisiana	North Carolina
Mississippi	Nevada
Alabama	New Mexico
Texas	New York
Georgia	Pennsylvania
California	Ohio
Missouri	Illinois
Kansas	Indiana
Florida	Arizona
South Carolina	Kentucky
Tennessee	Nebraska
Oklahoma	



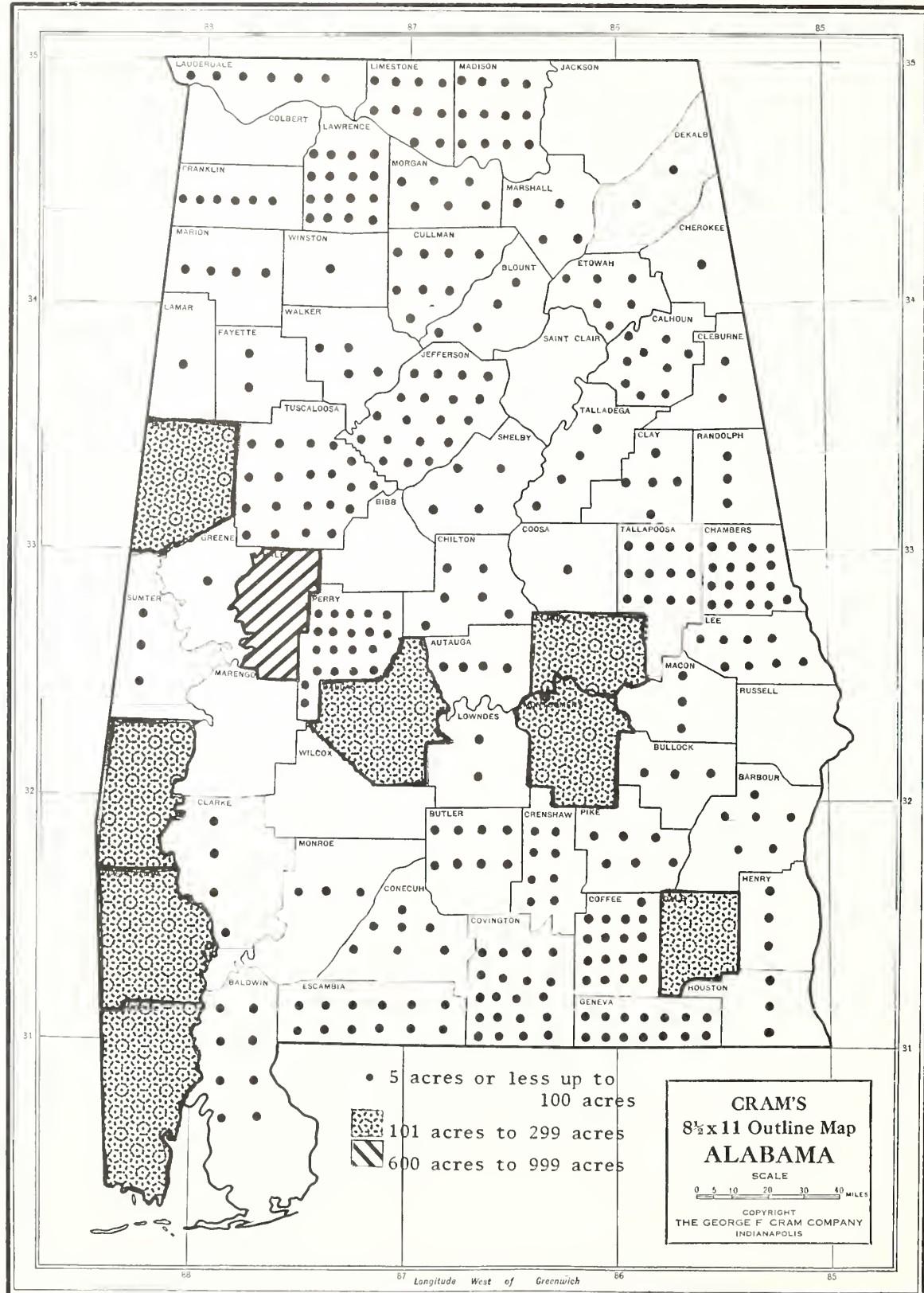


MAP NO. COS22—MISSISSIPPI

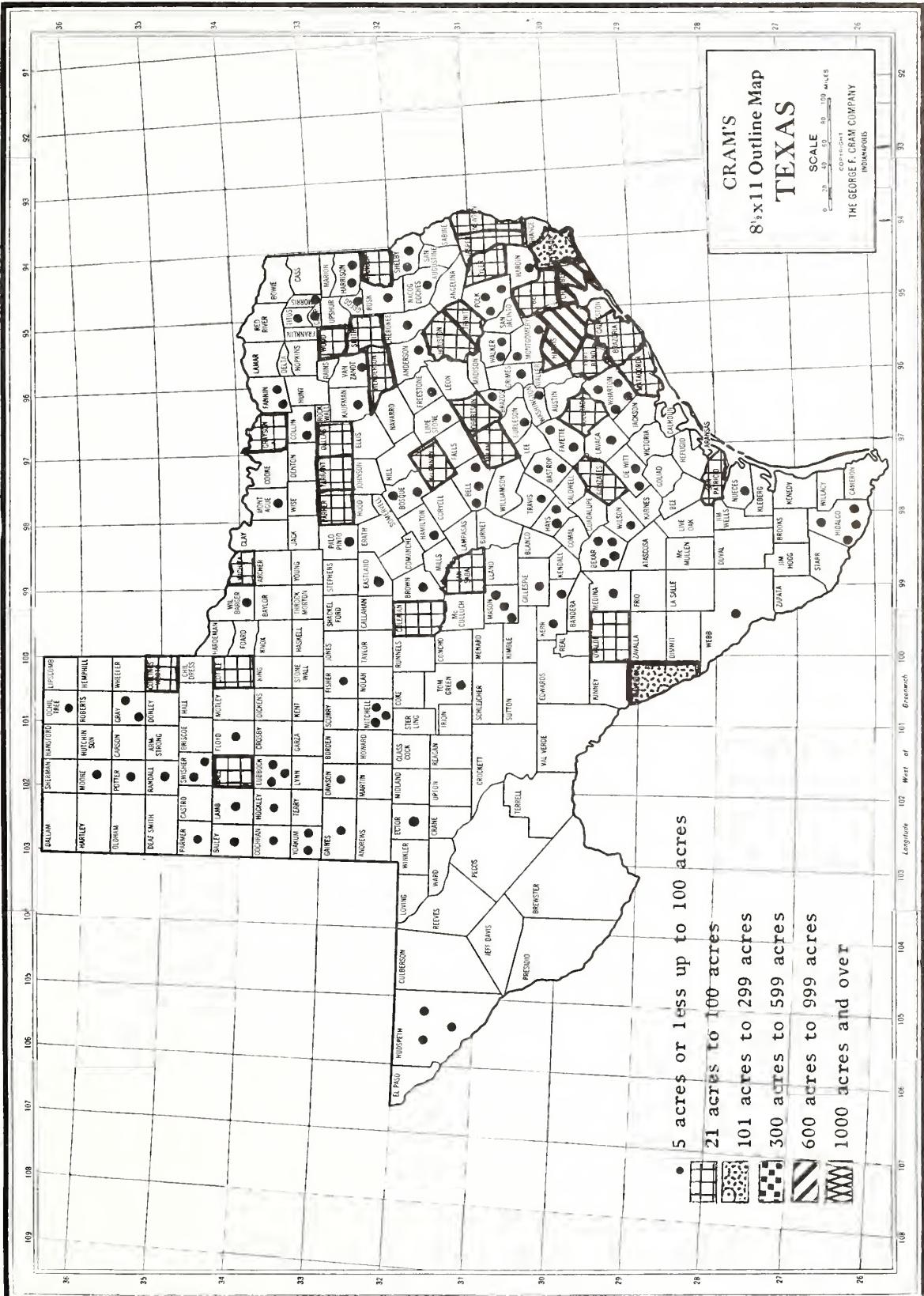


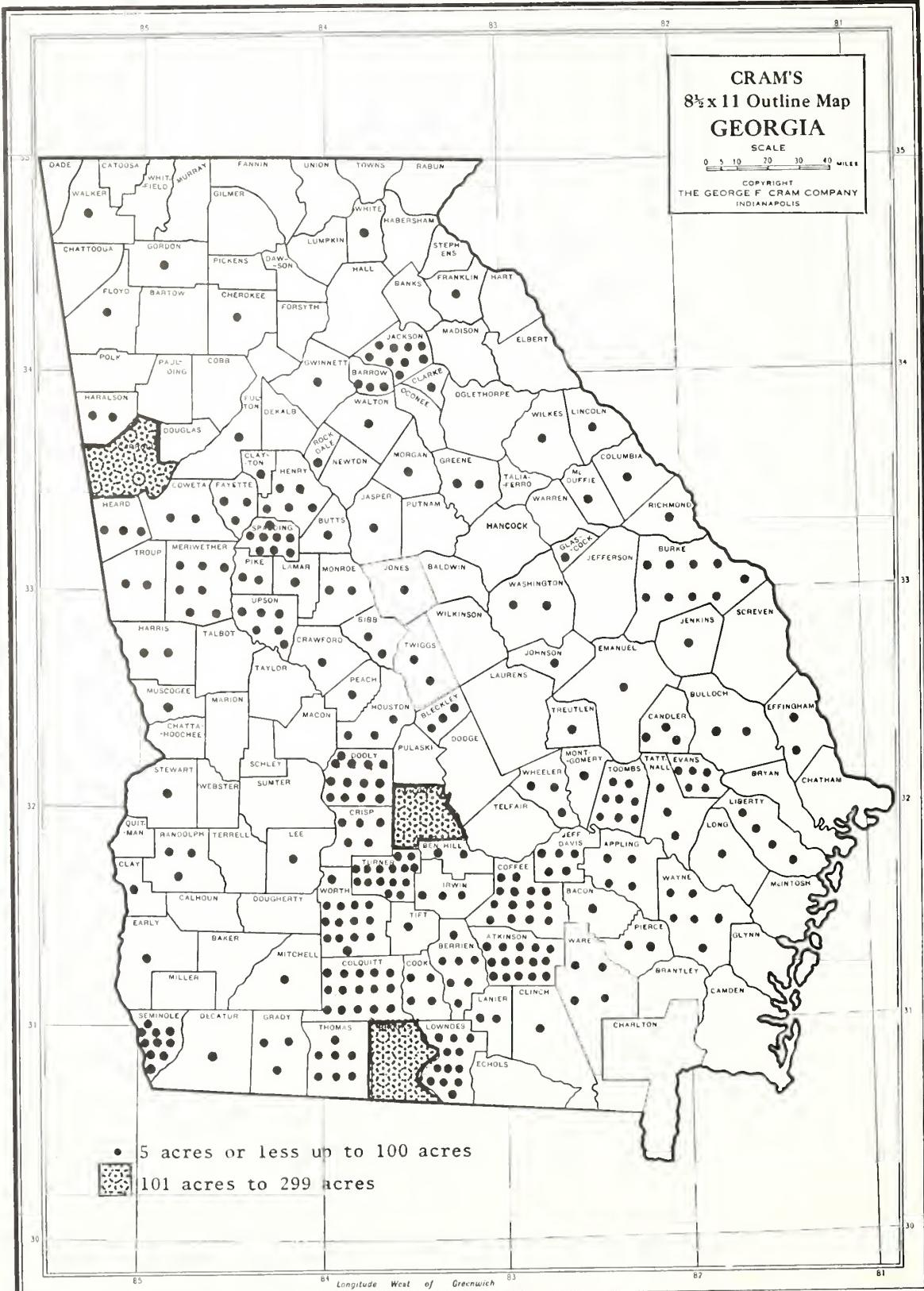
MISSISSIPPI: PRODUCTION DENSITY FOR FOODSIZE CATFISH, 1970

MAP NO. COS1—ALABAMA

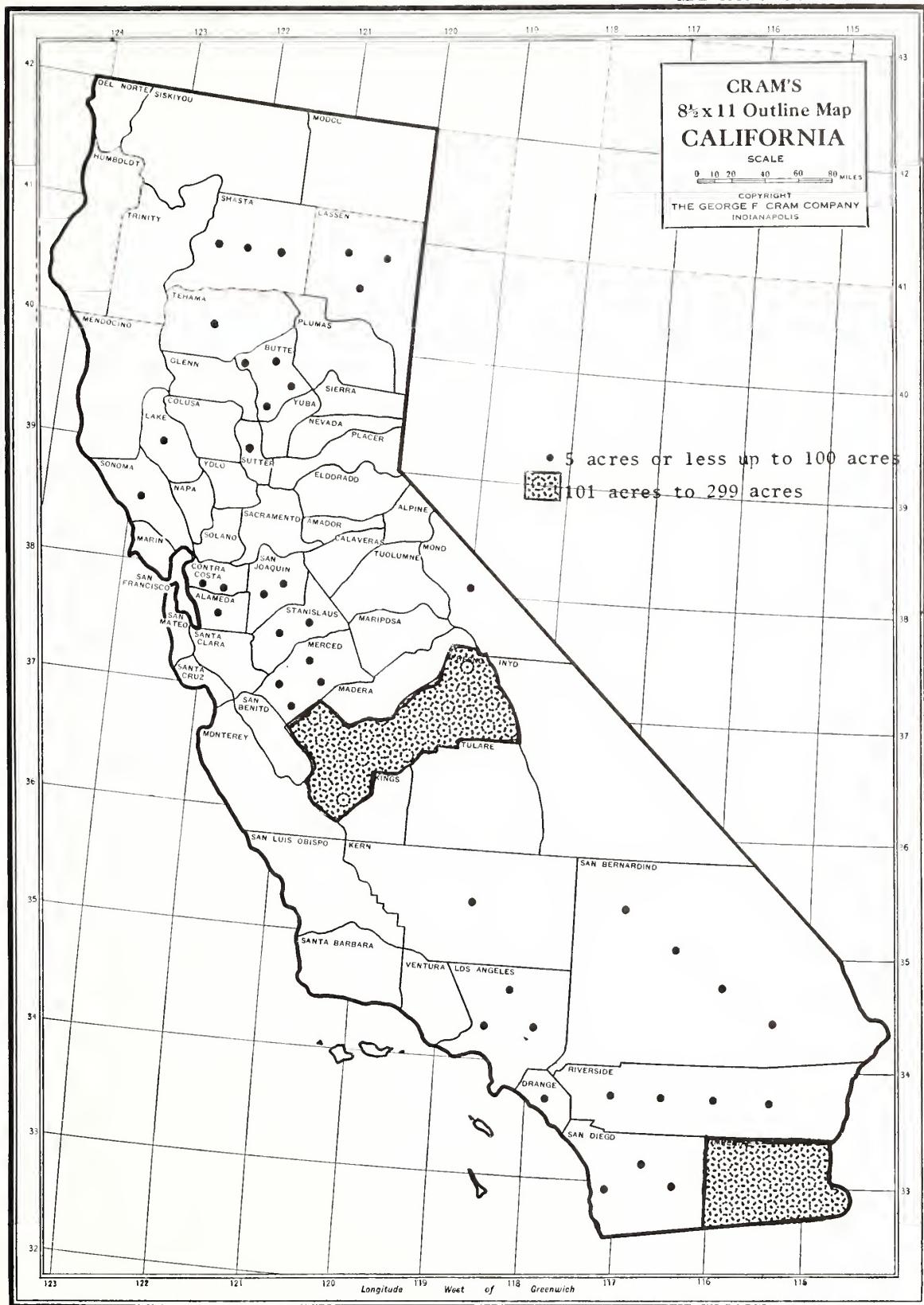


ALABAMA: PRODUCTION DENSITY FOR FOODSIZE CATFISH, 1970

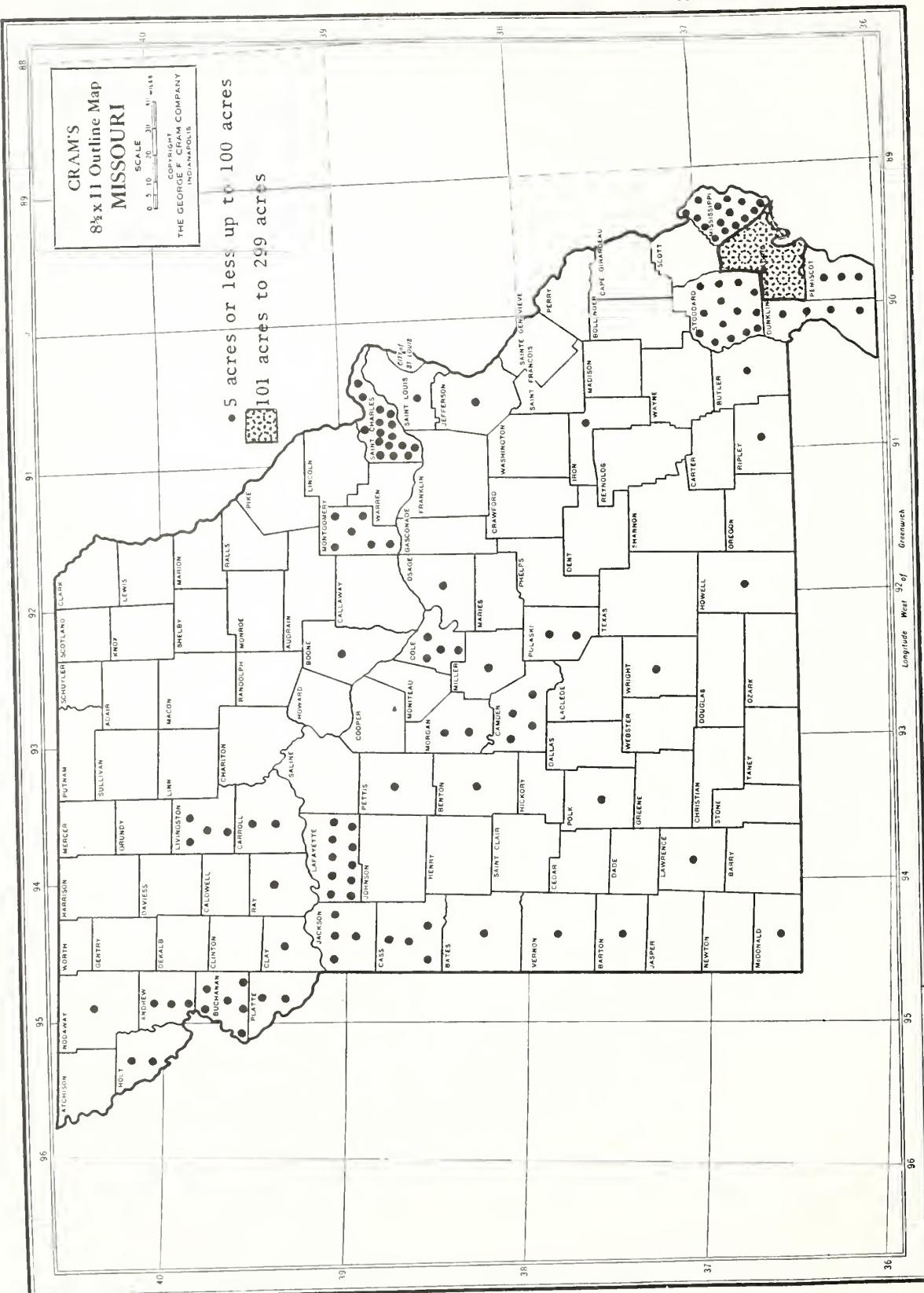




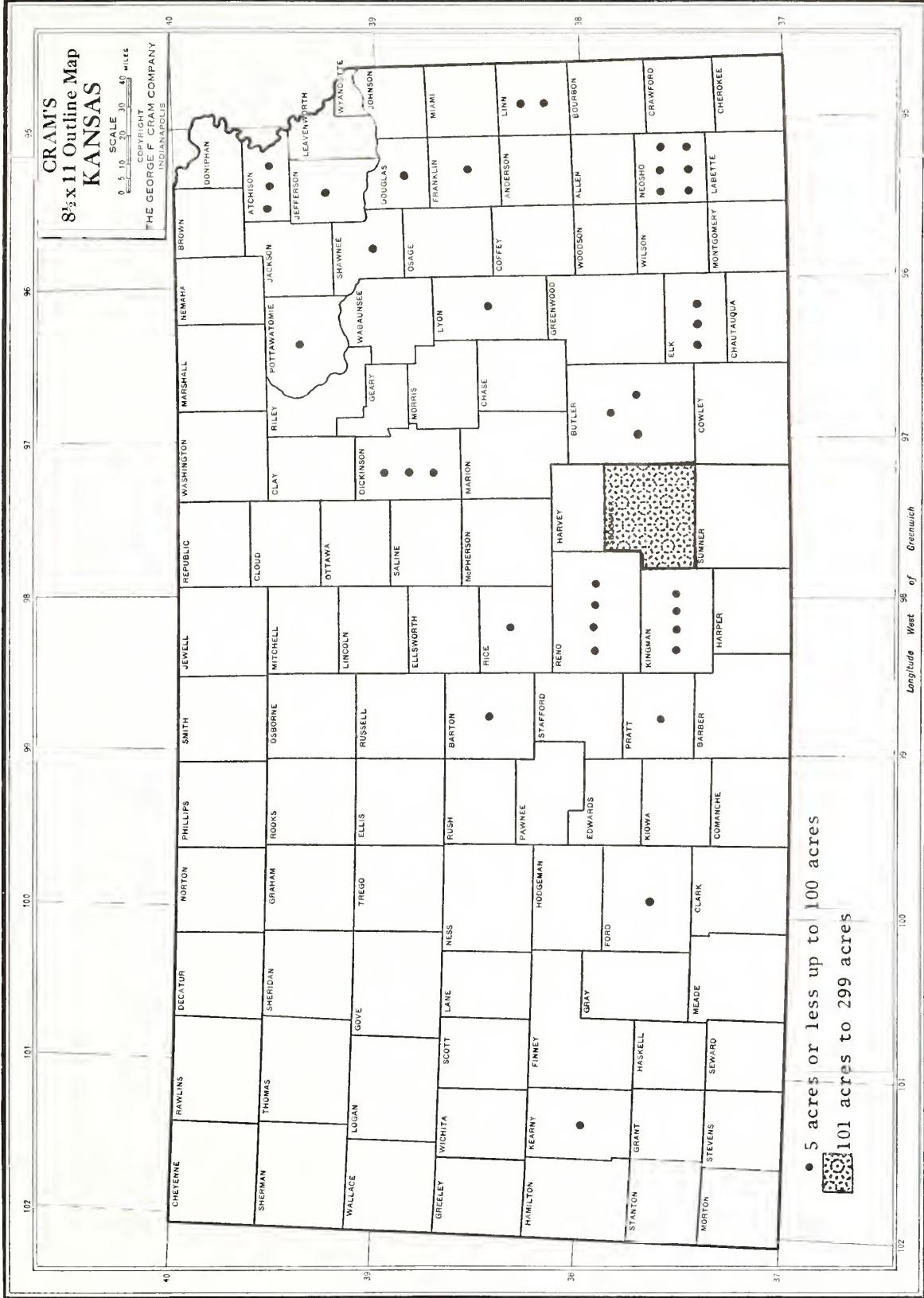
GEORGIA: PRODUCTION DENSITY FOR FOODSIZE CATFISH, 1970



CALIFORNIA: PRODUCTION DENSITY FOR FOODSIZE CATFISH, 1970

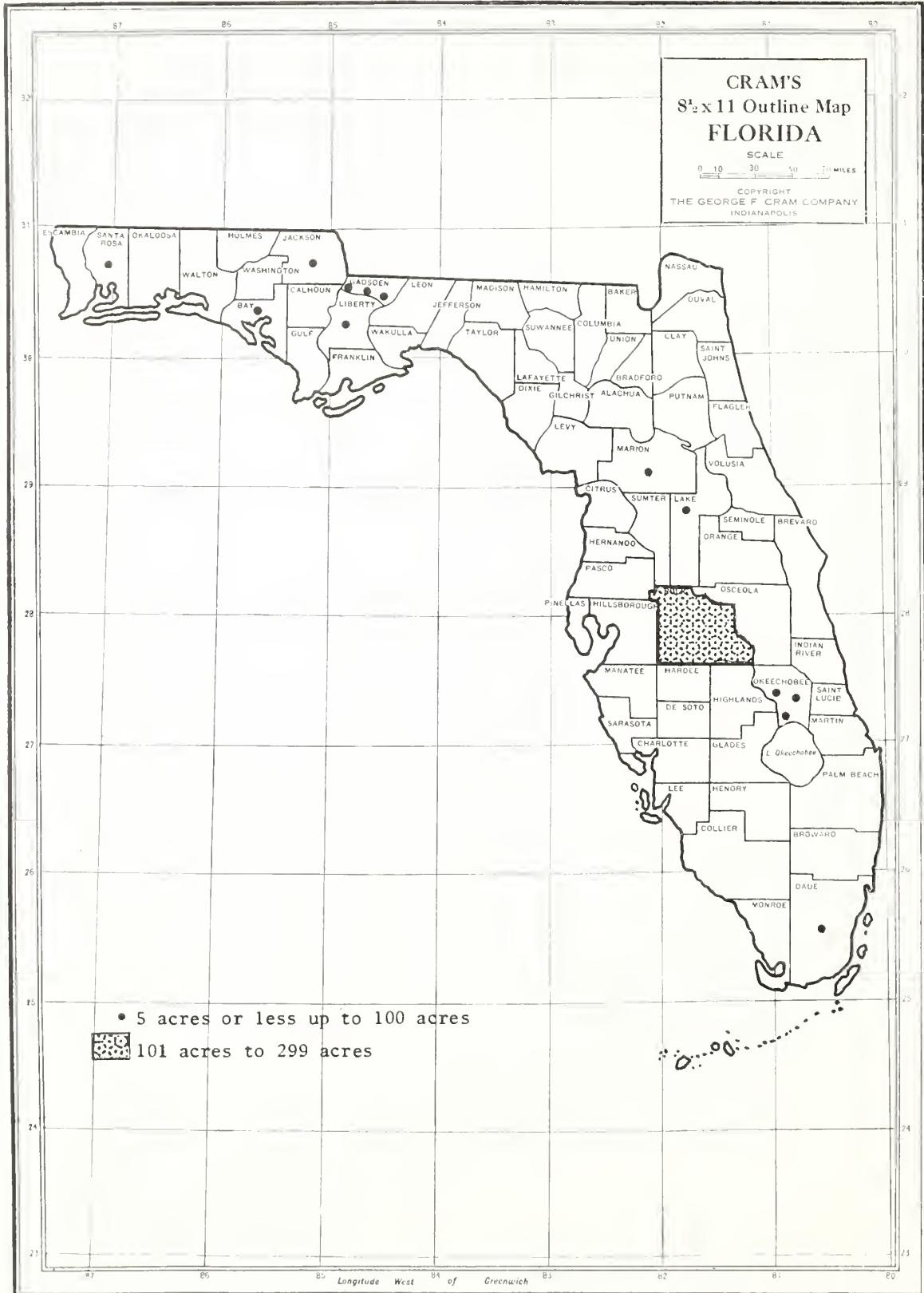


MAP NO. COS14-KANSAS



- 5 acres or less up to 100 acres
- 101 acres to 299 acres

KANSAS: PRODUCTION DENSITY FOR FOODSIZE CATFISH, 1970



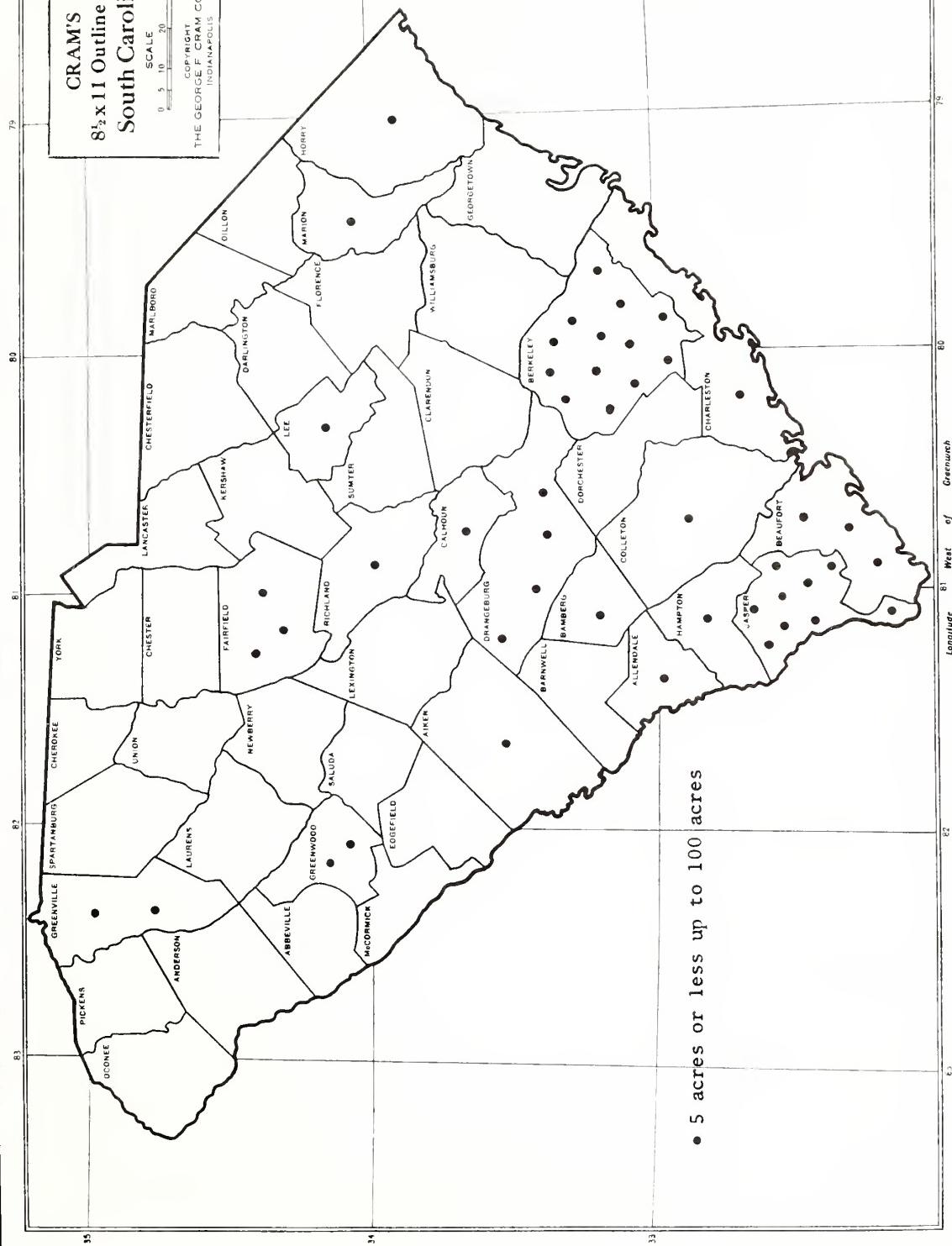
FLORIDA: PRODUCTION DENSITY FOR FOODSIZE CATFISH, 1970

CRAM'S
8½ x 11 Outline Map
South Carolina

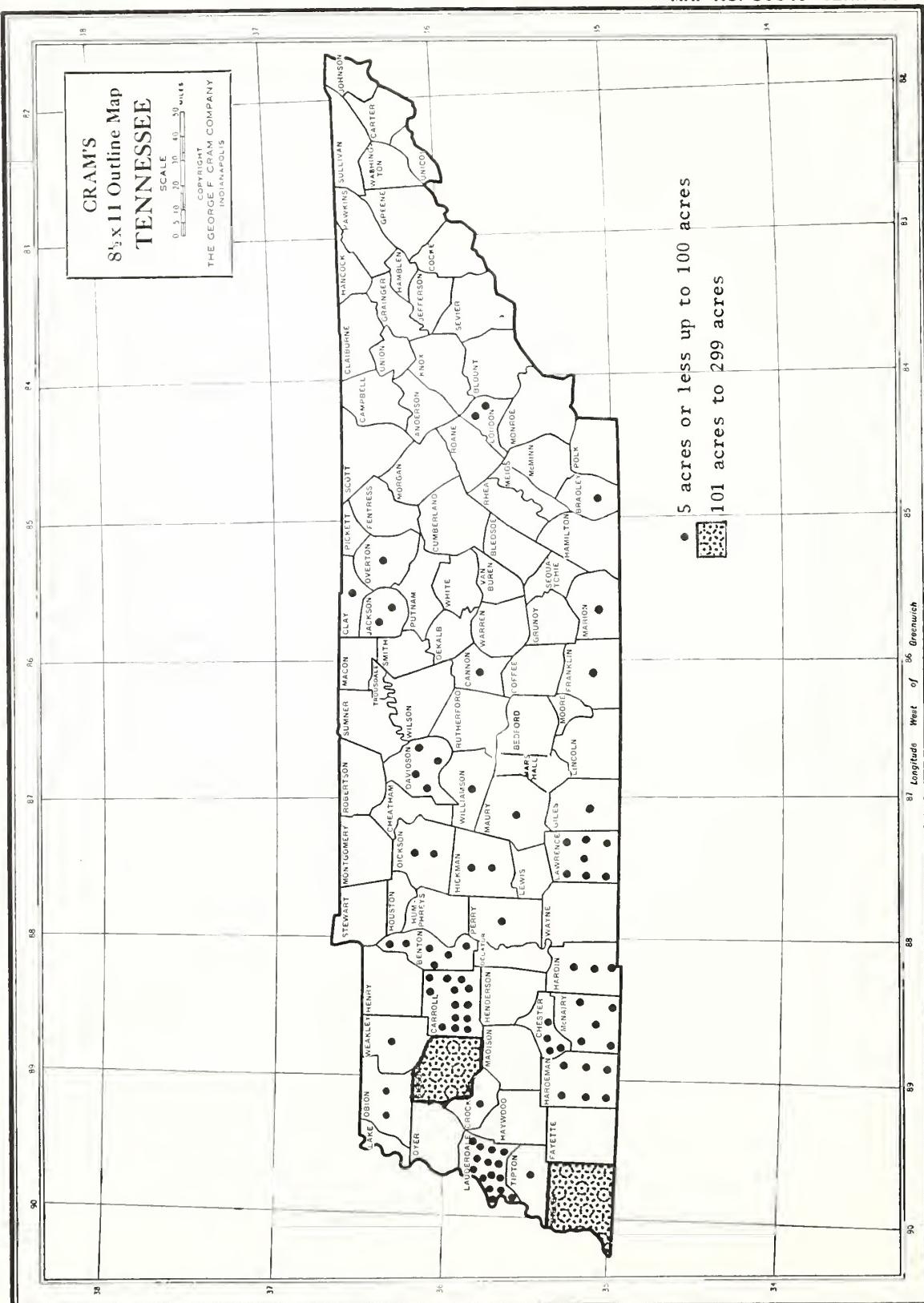
SCALE

0 5 10 20

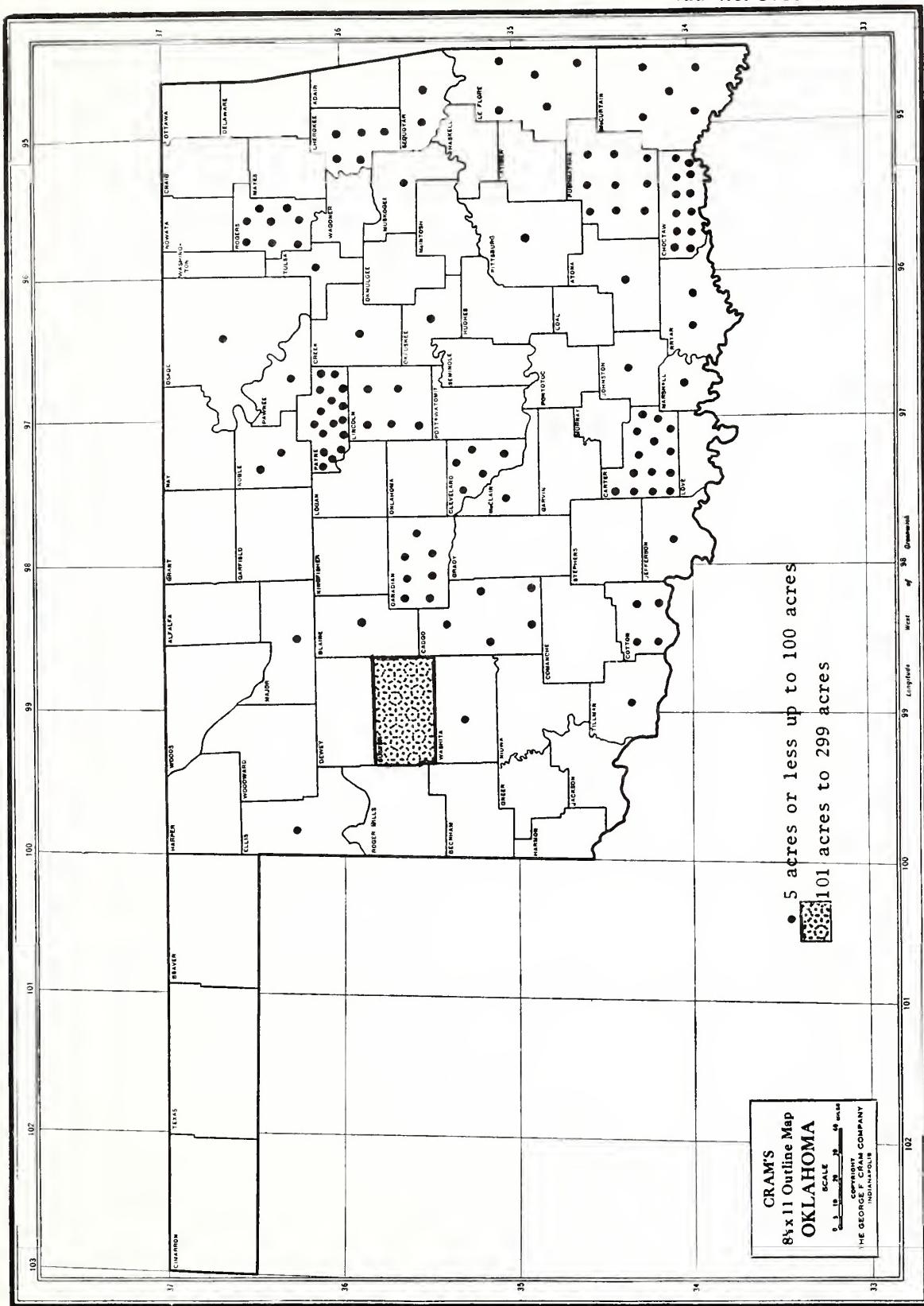
30 miles

Copyright
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Indianapolis

SOUTH CAROLINA: PRODUCTION DENSITY FOR FOODSIZE CATFISH, 1970



MAP NO. COB34—OKLAHOMA



OKLAHOMA: PRODUCTION DENSITY FOR FOODSIZE CATFISH, 1970

MAP NO. COS20—MICHIGAN

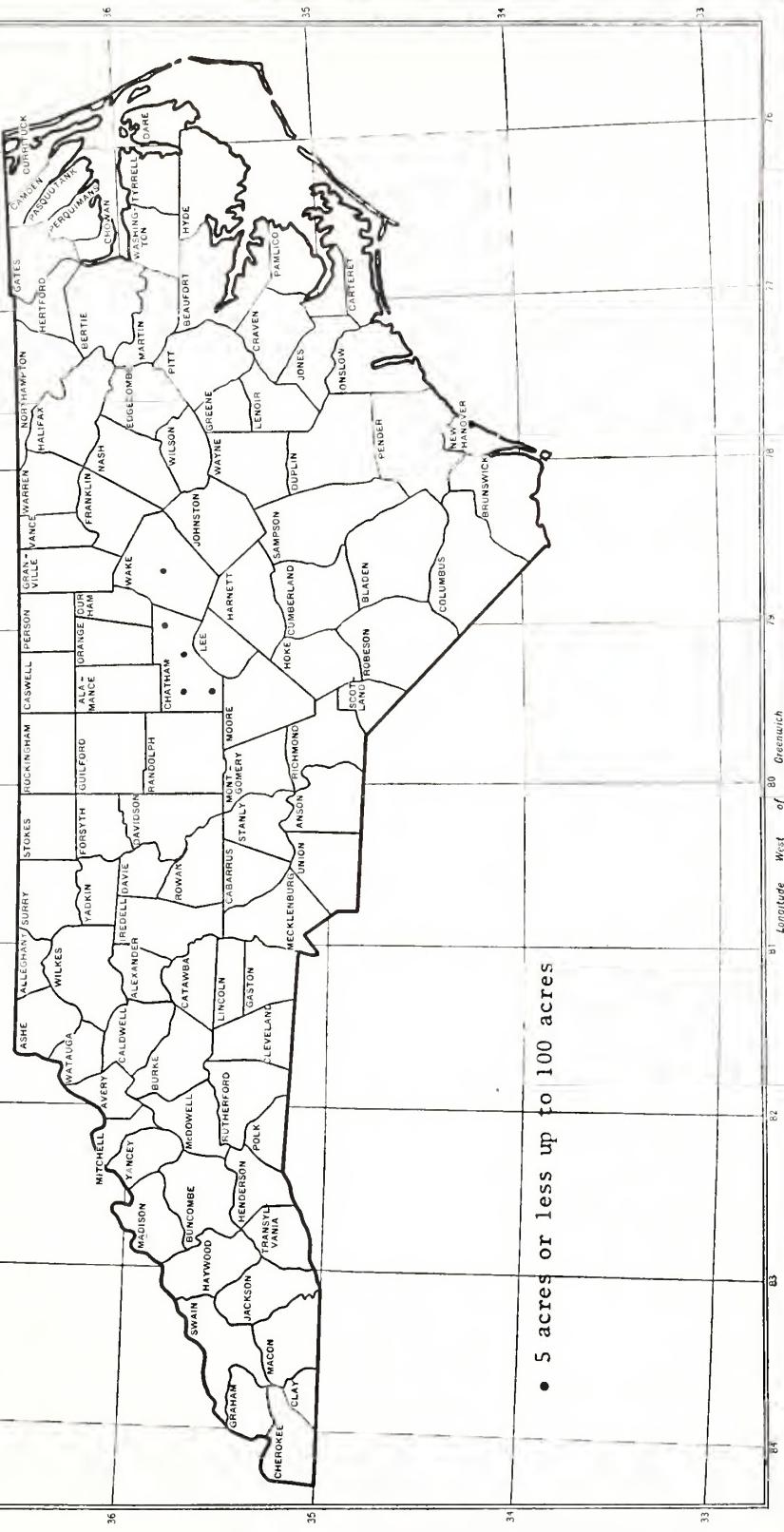


MICHIGAN: PRODUCTION DENSITY FOR FOODSIZE CATFISH, 1970

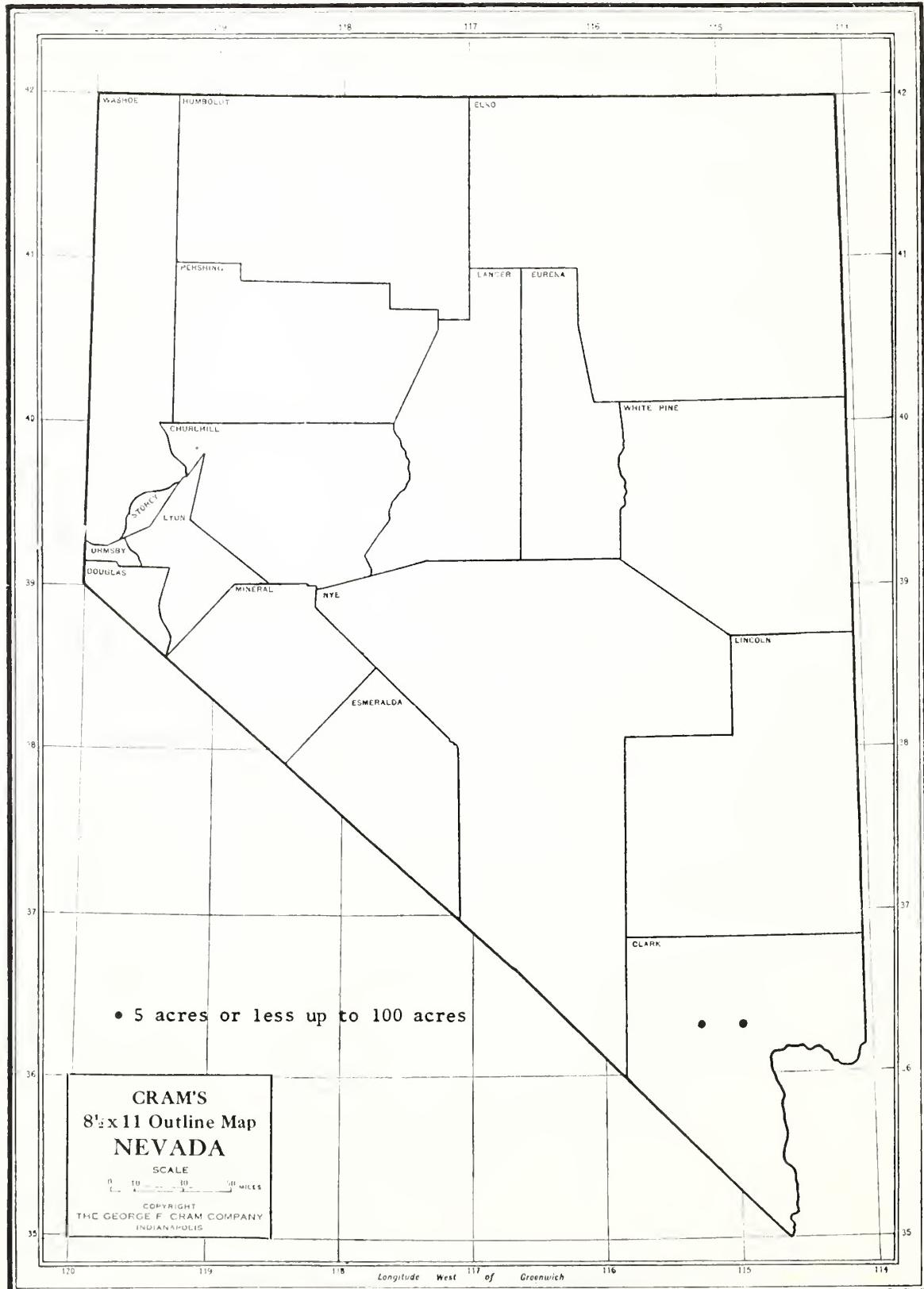
MAP NO. COS31—NORTH CAROLINA

CRAM'S
8½x11 Outline Map
North Carolina
SCALE
0 10 20 miles
37

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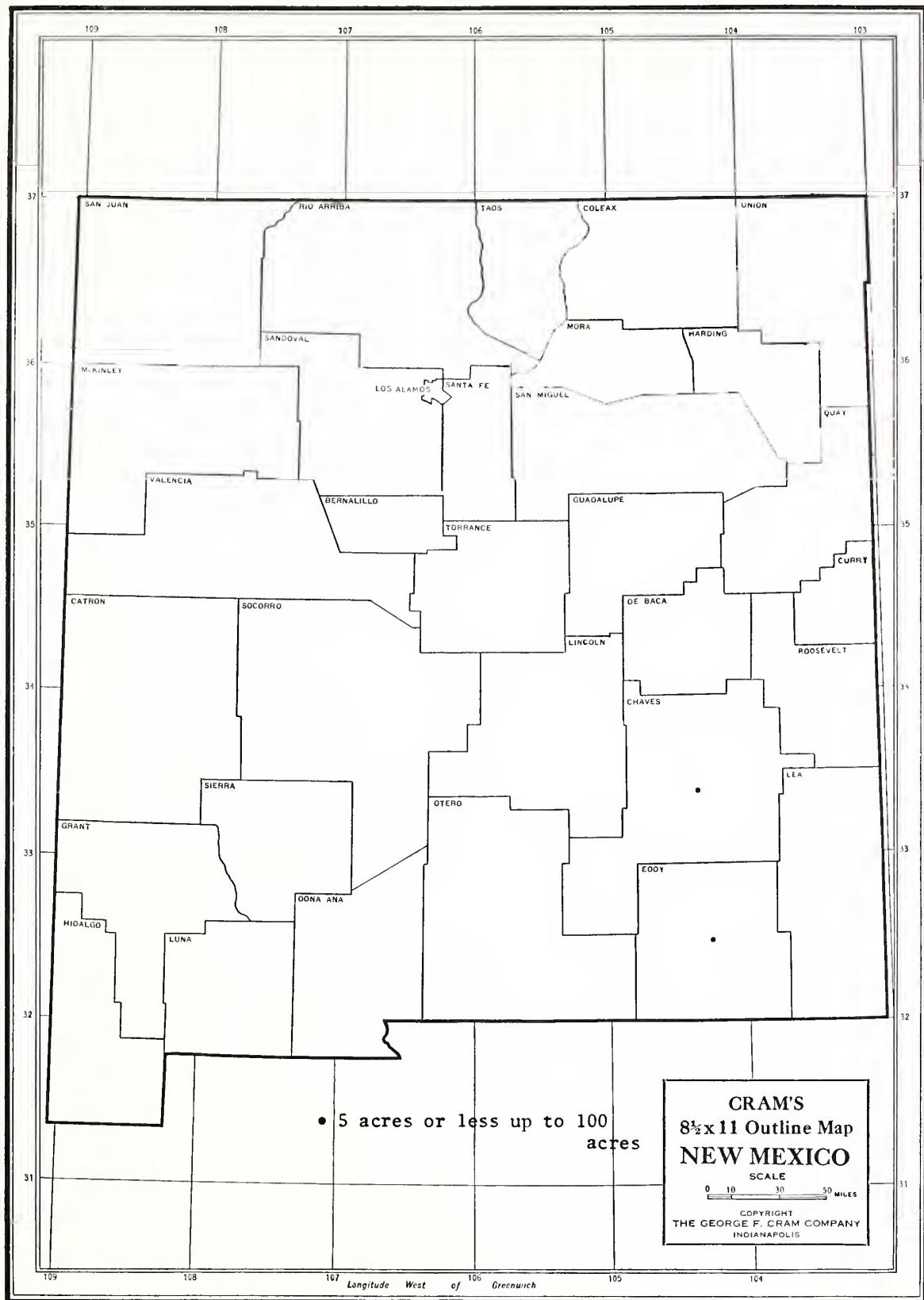


NORTH CAROLINA: PRODUCTION DENSITY FOR FOODSIZE CATFISH, 1970

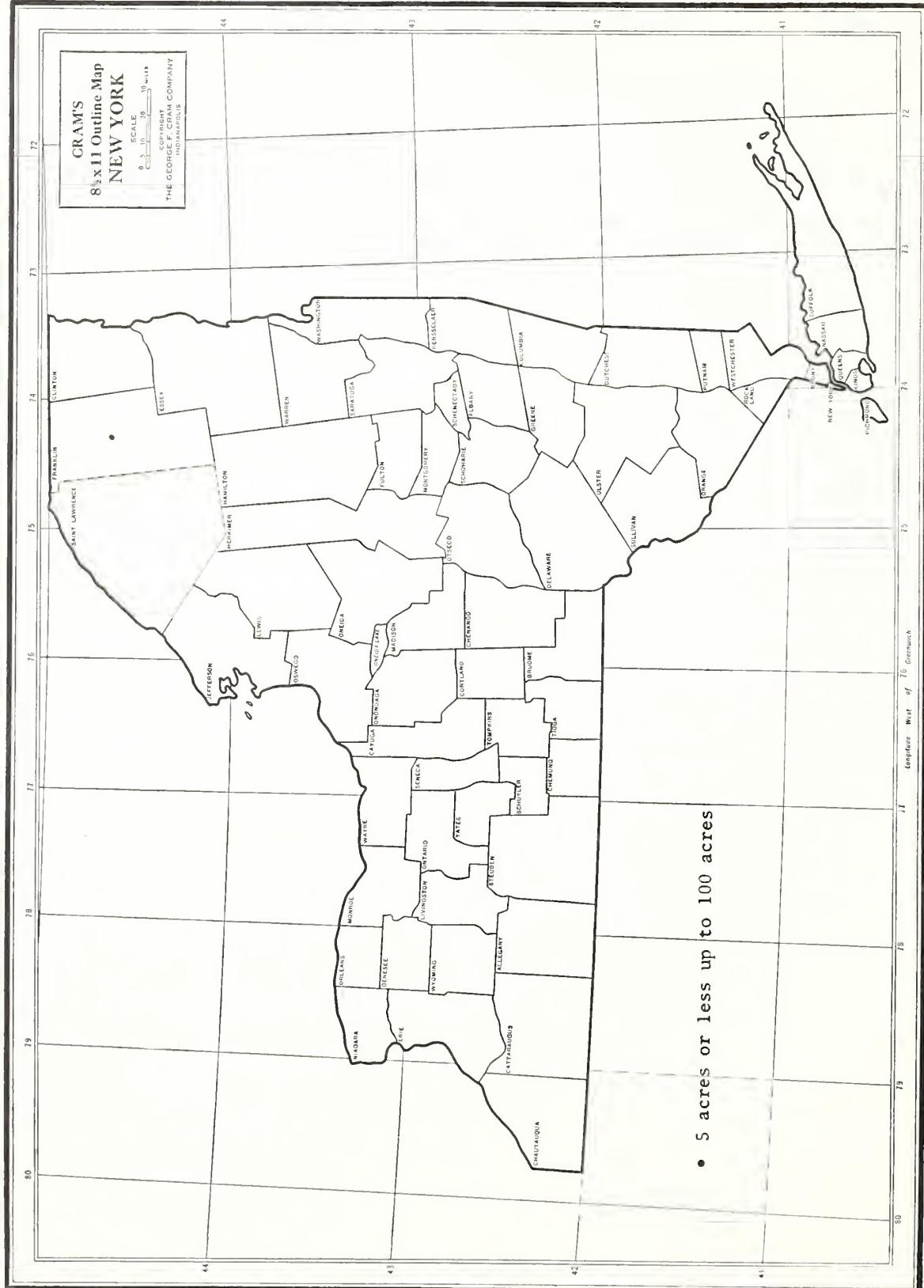


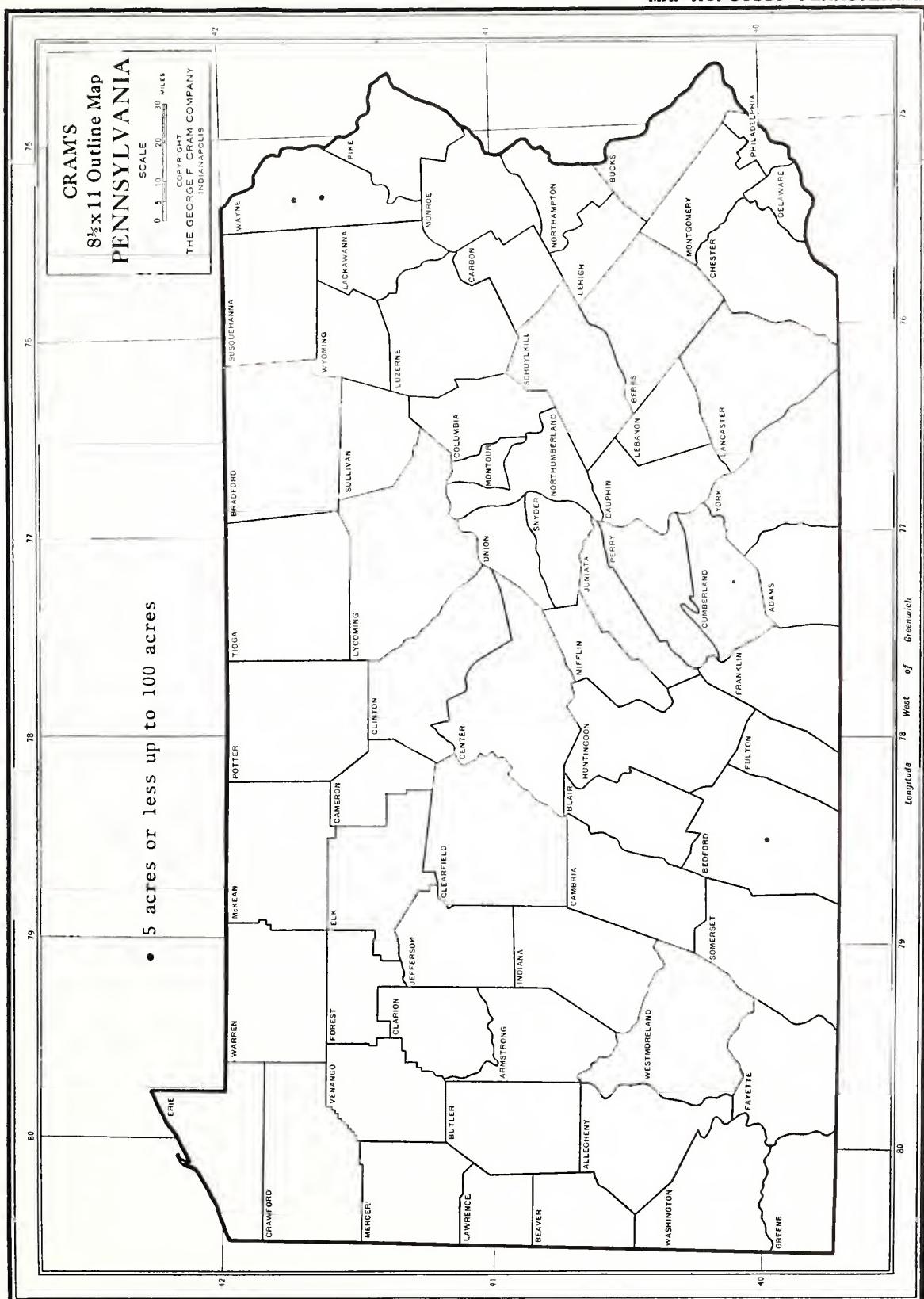
NEVADA: PRODUCTION DENSITY FOR FOODSIZE CATFISH, 1970

MAP NO. COS29—NEW MEXICO



NEW MEXICO: PRODUCTION DENSITY FOR FOODSIZE CATFISH, 1970

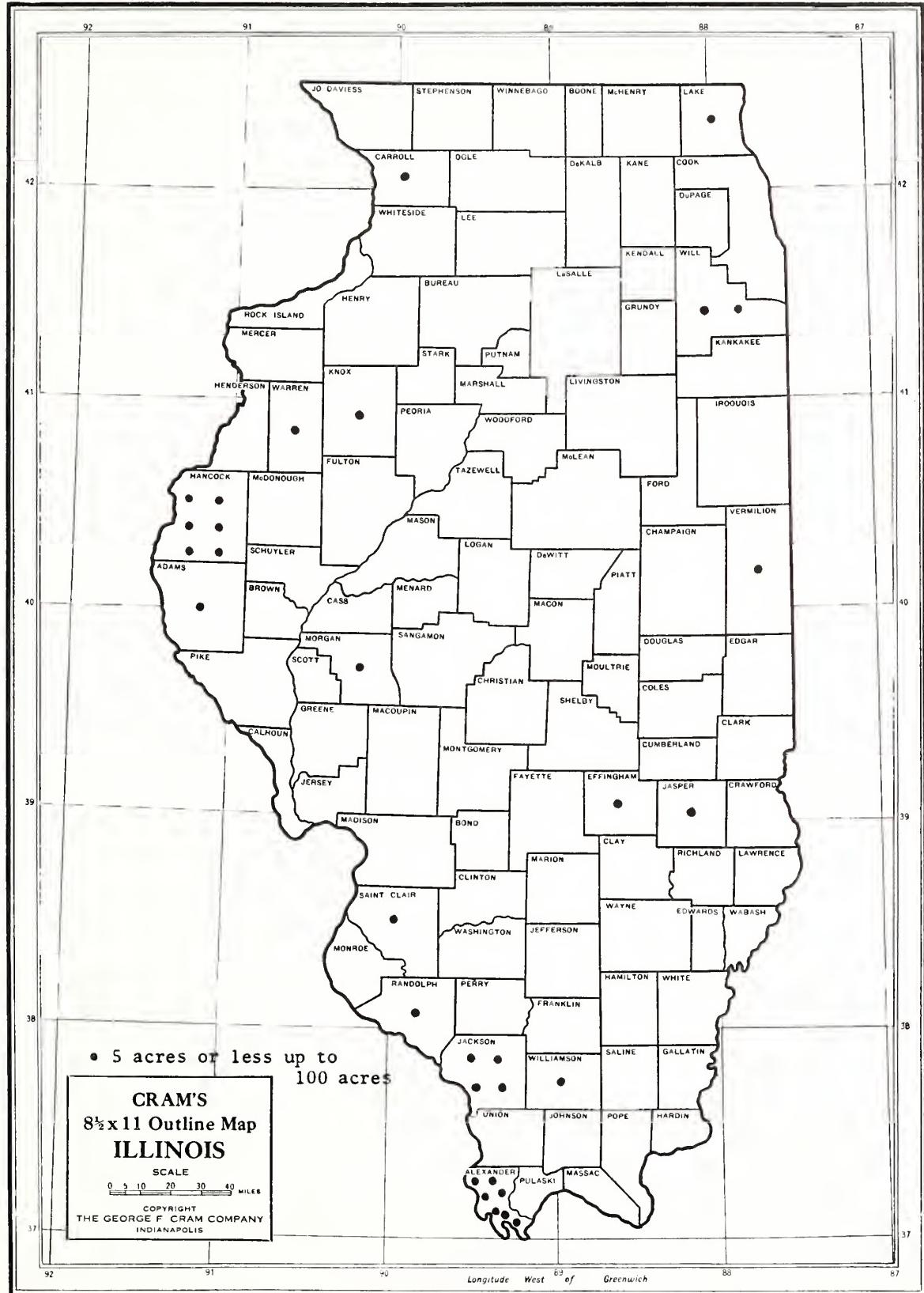






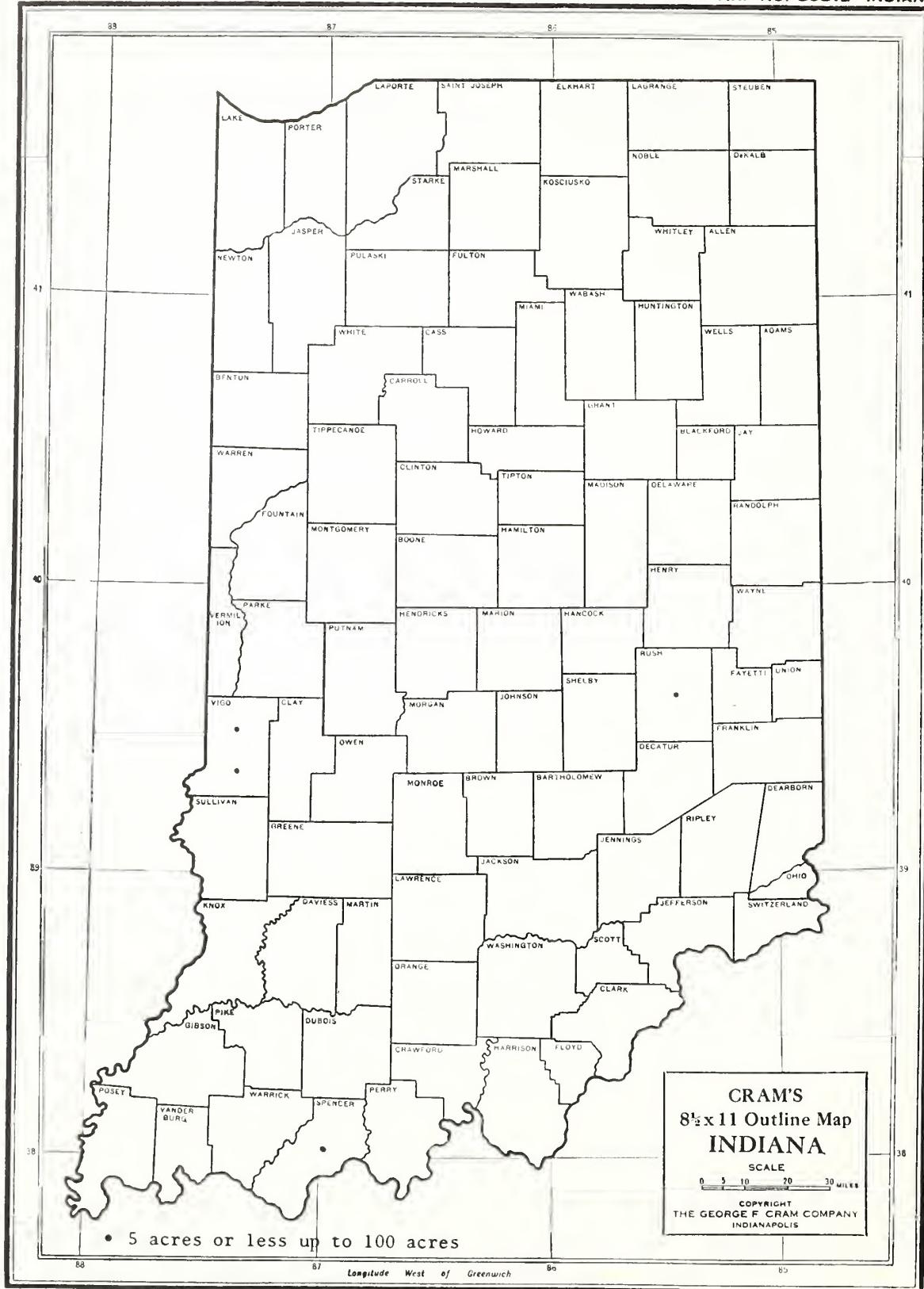
OHIO: PRODUCTION DENSITY FOR FOODSIZE CATFISH, 1970

MAP NO. COS11—ILLINOIS



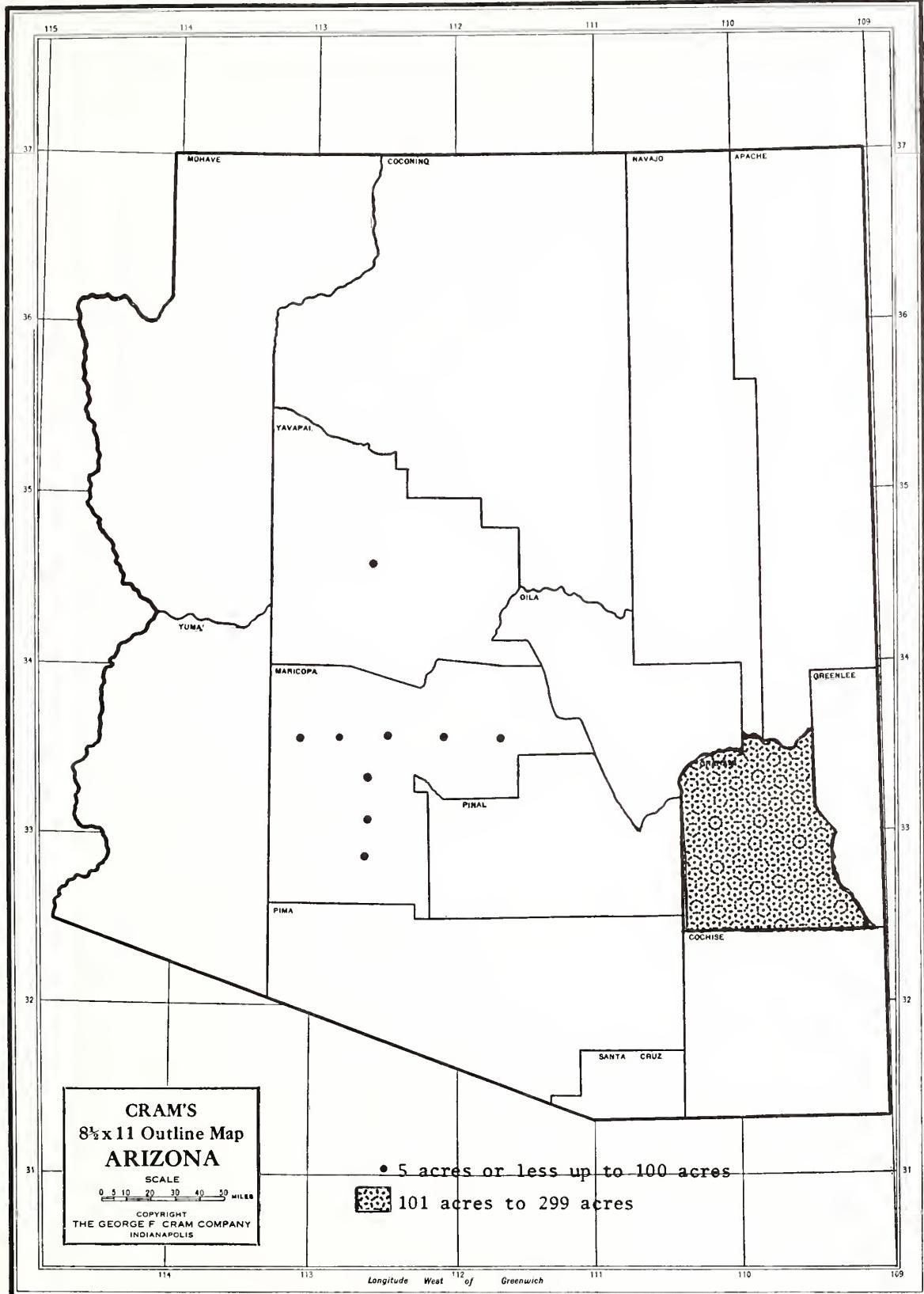
ILLINOIS: PRODUCTION DENSITY FOR FOODSIZE CATFISH, 1970

MAP NO. COS12—INDIANA

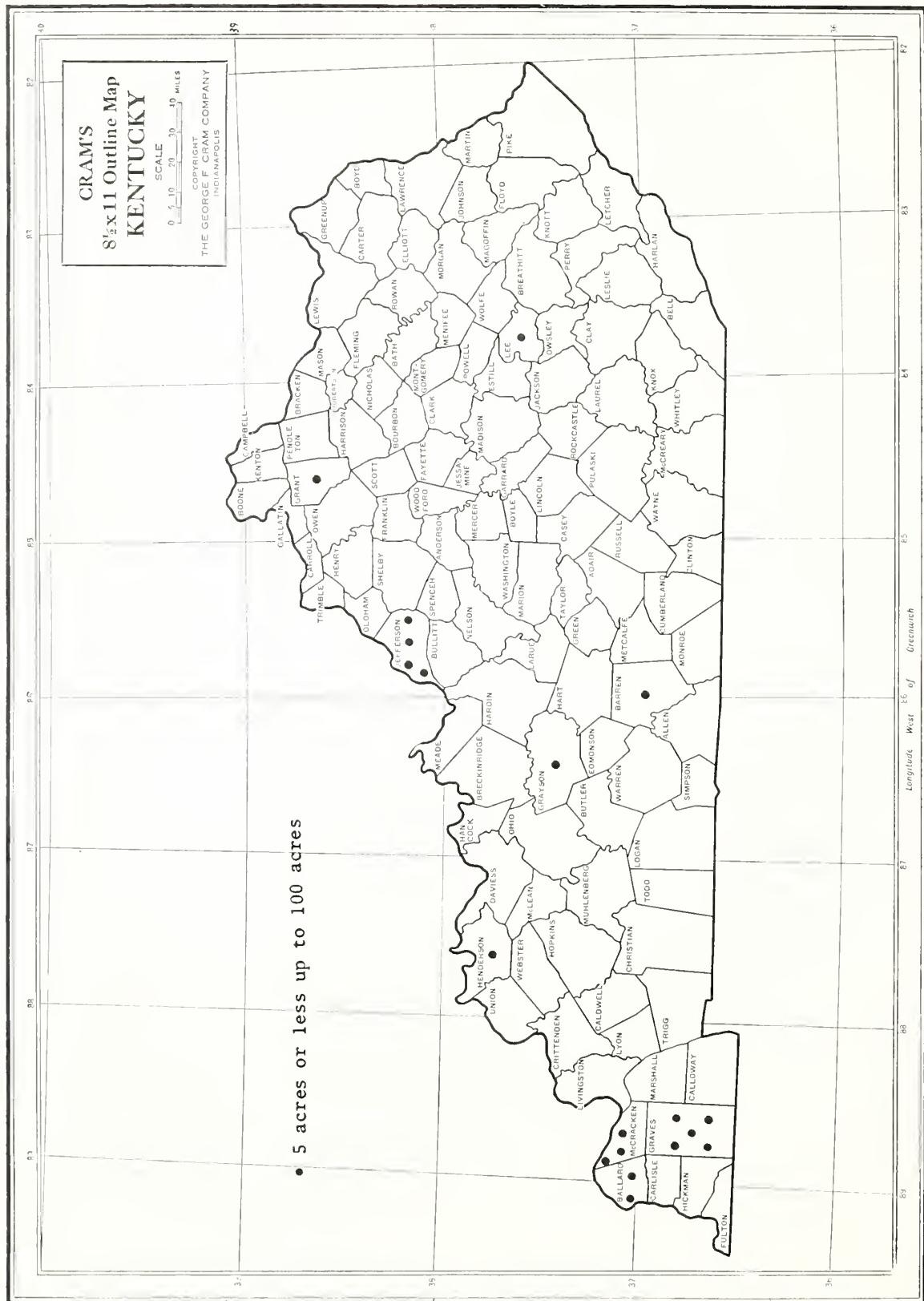


INDIANA: PRODUCTION DENSITY FOR FOODSIZE CATFISH, 1970

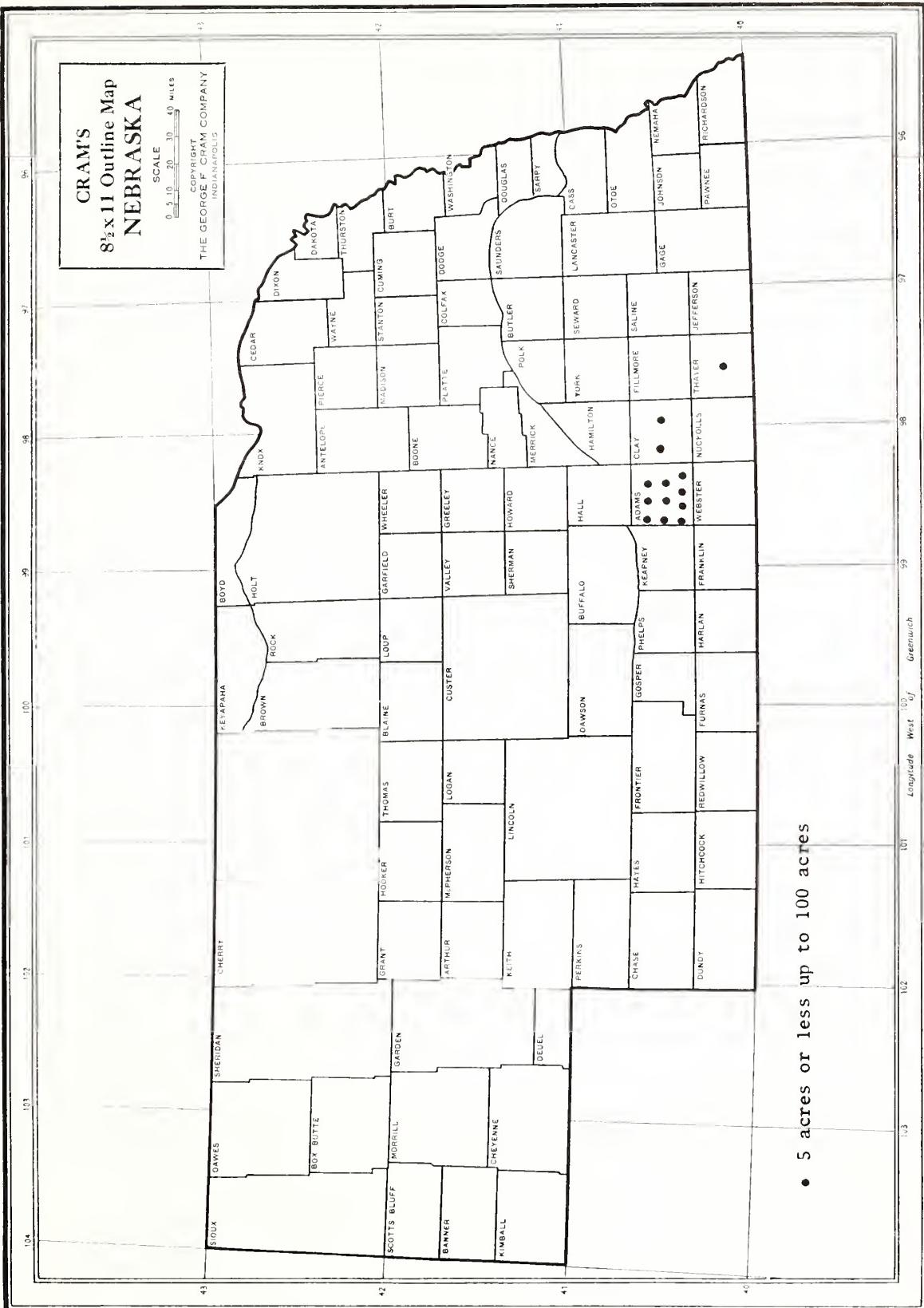
MAP NO. COS2—ARIZONA



ARIZONA: PRODUCTION DENSITY FOR FOODSIZE CATFISH, 1970



KENTUCKY: PRODUCTION DENSITY FOR FOODSIZE CATFISH, 1970



- 5 acres or less up to 100 acres

APPENDIX D

STATE DATA TABLES, FARM PRODUCER SURVEY, 1970

	<u>Page</u>
Number of Fingerlings	173
Size of Fingerlings	185
Stocking and Harvesting Dates.	191
Volume of Fingerlings	203
Value of Fingerling Sales.	207
Volume of Foodsize Catfish Sales	210
Value of Foodsize Catfish Sold	222

NUMBER OF FINGERLINGS PRODUCERS PLAN TO STOCK
PER ACRE IN 1971, BY MONTH

Month	Number of fingerlings stocked per acre in thousands						Total		
	<1	1<1.5	1.5<2	2<2.5	2.5<3	3<3.5	3.5<5	5+	Total
<u>Arkansas</u>								-	
January	159	629	241			103		1,132	
February		211	24			124		359	
March	150	14	75	273			47	559	
April	164	436	1,129	166	3	22	37	1,964	
May	163	400	244	150		202		1,159	
June	189			39				228	
July		49	74				123		
August			165				165		
September									
October	159	79	20	29				287	
November		331						331	
December									
Other		<u>318</u>	<u>389</u>					<u>707</u>	
Total	666	1,486	3,136	1,152	32	327	161	54	7,014

(continued)

NUMBER OF FINGERLINGS PRODUCERS PLAN TO STOCK
PER ACRE IN 1971, BY MONTH (continued)

Month	Number of fingerlings stocked per acre in thousands						Total
	<1	1<1.5	1.5<2	2<2.5	2.5<3	3<3.5	3.5<5
<u>Louisiana</u>							
January							59
February							248
March	31	2	88	122	5		
April	23	143	101	874		1,141	
May		2	52	263		317	
June		66	296	74		436	
July							121
August		91	10	20			
September							
October		171		39			210
November			54	445			499
December			33				33
Other			4.3		166	143	332
Total	54	452	570	2,261	74	5	3,416

(continued)

NUMBER OF FINGERLINGS PRODUCERS PLAN TO STOCK
PER ACRE IN 1971, BY MONTH (continued)

Month	Number of fingerlings stocked per acre in thousands						Total
	<1	1<1.5	1.5<2	2<2.5	2.5<3	3<3.5	
January	121						121
February	68	150	32		16	266	
March	264	158	55			477	
April	182	135	22		32	371	
May	239					239	
June	36				16	52	
July	25					25	
August	55				32	87	
September	50					50	
October	32	106			55	193	
November							
December		16			36	52	
Other	—	—	—	184	276		460
Total	100	264	1,322	498	161	48	2,393

(continued)

NUMBER OF FINGERLINGS PRODUCERS PLAN TO STOCK
PER ACRE IN 1971, BY MONTH (continued)

Month	Number of fingerlings stocked per acre in thousands					Total
	<1	1<1.5	1.5<2	2<2.5	2.5<3	
<u>Texas</u>						
January	77	5				82
February		15	3			59
March	42		16			67
April	13	16		192	20	241
May	103	146	170	313	18	750
June		43		10	68	121
July				15		15
August				51		51
September	103					103
October		7	10			17
November			3			3
December						
Other		237	233			
Total	116	587	410	687	126	3
						50
						1,979

(continued)

NUMBER OF FINGERLINGS PRODUCERS PLAN TO STOCK
PER ACRE IN 1971, BY MONTH (continued)

Month	Number of fingerlings stocked per acre in thousands						Total	
	<1	1<1.5	1.5<2	2<2.5	2.5<3	3<3.5	3.5<5	5+
Georgia								
January								
February								
March	48							48
April	207	53						490
May	73							97
June	76	384						460
July	36	136						172
August								
September								
October								
November								
December								
Other	—	—	—	—	—	—	—	—
Total	76	748	189	—	—	—	—	1,267

(continued)

NUMBER OF FINGERLINGS PRODUCERS PLAN TO STOCK
PER ACRE IN 1971, BY MONTH (continued)

Month	Number of fingerlings stocked per acre in thousands						Total
	<1	1<1.5	1.5<2	2<2.5	2.5<3	3<3.5	
January	35						35
February		35					35
March			4				4
April	265		120				385
May		77					77
June			37				37
July			13				13
August							
September							
October				35			35
November							
December				35			35
Other							
Total	13		4			519	120
							656

(continued)

NUMBER OF FINGERLINGS PRODUCERS PLAN TO STOCK
PER ACRE IN 1971, BY MONTH (continued)

Month	Number of fingerlings stocked per acre in thousands						Total	
	<1	1<1.5	1.5<2	2<2.5	2.5<3	3<3.5	3.5<5	5+
Missouri								
January	44							44
February		12						12
March	2	4						14
April	2	18	2			3		25
May	11	22		13.3				197
June	2	46	25					73
July								
August					24			24
September								
October		2				29		31
November								
December								
Other					137			137
Total	17	136	333		37	3	31	557

(continued)

NUMBER OF FINGERLINGS PRODUCERS PLAN TO STOCK
PER ACRE IN 1971, BY MONTH (continued)

Month	Number of fingerlings stocked per acre in thousands						Total
	<1	1<1.5	1.5<2	2<2.5	2.5<3	3<3.5	
Kansas	-	-	-	-	-	-	-
January	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-
March	110	-	-	-	-	-	110
April	18	18	27	-	-	1	64
May	12	-	1	-	-	-	71
June	-	-	-	-	-	-	-
July	-	-	-	-	-	-	-
August	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-
October	-	-	-	-	-	-	-
November	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-
Total	12	128	19	27	58	-	245

(continued)

NUMBER OF FINGERLINGS PRODUCERS PLAN TO STOCK
PER ACRE IN 1971, BY MONTH (continued)

Month	Number of fingerlings stocked per acre in thousands						Total
	<1	1<1.5	1.5<2	2<2.5	2.5<3	3<3.5	
Oklahoma	-	-	-	-	-	-	-
January	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-
April	58	106	37	34	4	239	
May		33	66	21		120	
June		20				20	
July		6				20	26
August							
September							
October						110	
November		18	5				23
December							
Other	-	-	-	-	-	-	-
Total	58	130	95	210	21	4	538

(continued)

NUMBER OF FINGERLINGS PRODUCERS PLAN TO STOCK
PER ACRE IN 1971, BY MONTH (continued)

Month	Number of fingerlings stocked per acre in thousands					Total
	<1	1<1.5	1.5<2	2<2.5	2.5<3	
	-	-	-	- acres	-	-
<u>Tennessee</u>						
January	4	2				6
February	9	4				13
March	43			15	34	92
April	2	90	140	15	4	255
May	20	22			44	86
June						
July						
August				4		4
September			6		4	10
October				2		2
November			24			24
December						
Other	—	—	—	4	—	—
Total	2	190	168	42	44	6
						2
						496

(continued)

NUMBER OF FINGERLINGS PRODUCERS PLAN TO STOCK
PER ACRE IN 1971, BY MONTH (continued)

Month	Number of fingerlings stocked per acre in thousands						Total	
	<1	1<1.5	1.5<2	2<2.5	2.5<3	3<3.5	3.5<5	5+
South Carolina								
January							62	
February								
March	3	84					175	
April	14		15				29	
May								
June				8	10		18	
July								
August			16	14			30	
September			12	23			35	
October		15					15	
November								
December								
Other								
Total	15	17	146		131	45	10	364

(continued)

NUMBER OF FINGERLINGS PRODUCERS PLAN TO STOCK
PER ACRE IN 1971, BY MONTH (continued)

Month	Number of fingerlings stocked per acre in thousands					Total
	<1	1<1.5	1.5<2	2<2.5	2.5<3	
March	2				3	5
April		14		15	4	33
May	18				30	48
June				43		43
July						
August				15		15
September			18		15	33
October						
November					376	
December						
Other	20	14	437	15	281	281
Total					341	834

SIZE OF FINGERLINGS PLANNED TO STOCK PER ACRE, BY MONTH, IN 1971

Stocking month	Under 1" <3"	3" <4"	4" <5"	5" <6"	6" <7"	7" <8"	8" <9"	9" & over	Total
<i>Acres in size groups - - - - -</i>									
<u>Arkansas</u>									
January	159	240	0	173	159	0	153	248	1,132
February	0	0	124	0	45	0	190	359	359
March	0	0	14	0	149	28	124	244	559
April	63	24	74	682	516	327	35	243	1,964
May	0	0	0	34	624	216	88	197	1,159
June	0	0	0	173	39	16	0	0	228
July	12	0	0	0	62	0	0	49	123
August	0	0	0	0	0	0	0	165	165
September	0	0	0	0	0	0	0	0	0
October	20	0	0	0	0	0	0	267	287
November	0	0	0	0	331	0	0	0	331
December	0	0	0	0	0	0	0	0	0
Others	0	0	0	0	0	389	0	318	707
Total	254	264	212	1,062	1,880	1,021	400	1,921	7,014
<u>Louisiana</u>									
January	28	0	31	0	0	0	0	0	59
February	0	0	0	0	0	0	0	0	0
March	0	27	0	11	5	19	11	175	248
April	0	0	138	24	35	248	0	696	1,141
May	0	0	69	2	0	200	0	46	317
June	0	0	0	380	0	0	0	56	436
July	0	0	0	0	0	0	0	0	0
August	0	0	11	0	110	0	0	0	121
September	0	0	0	0	0	0	0	0	0
October	0	0	0	5	205	0	0	0	210
November	0	0	0	405	58	0	36	0	499
December	0	0	0	0	0	0	0	33	33
Others	0	0	0	200	0	0	152	0	352
Total	28	27	249	1,027	413	467	199	1,006	3,416

(continued)

SIZE OF FINGERLINGS PLANNED TO STOCK PER ACRE, BY MONTH, IN 1971 (continued)

Stocking month	Acres in size groups						9" & over	Total
	Under 1" <3"	3" <4"	4" <5"	5" <6"	6" <7"	7" <8"		
Alabama								
January	0	0	30	91	0	0	0	121
February	0	67	183	16	0	0	0	266
March	0	0	271	126	44	36	0	477
April	0	16	89	192	16	50	0	371
May	132	33	42	25	7	0	0	239
June	16	0	0	36	0	0	0	52
July	0	0	0	25	0	0	0	25
August	0	8	79	0	0	0	0	87
September	0	0	0	50	0	0	0	50
October	0	50	88	55	0	0	0	193
November	0	0	0	0	0	0	0	0
December	16	36	0	0	0	0	0	52
Others	0	0	276	184	0	0	0	460
Total	164	210	1,058	800	67	86	0	2,393
Texas								
January	0	0	0	0	0	77	5	82
February	0	0	44	10	0	0	5	59
March	17	6	0	0	0	41	3	67
April	0	149	0	0	15	63	0	14
May	0	3	0	164	22	49	249	263
June	0	0	34	0	0	77	10	750
July	0	0	0	0	0	0	15	121
August	0	51	0	0	0	0	0	15
September	103	0	0	0	0	0	0	51
October	0	0	0	17	0	0	0	103
November	0	0	0	0	0	3	0	3
December	0	0	0	0	0	0	0	0
Others	0	0	0	0	0	233	237	470
Total	120	209	34	225	47	425	629	1,979

SIZE OF FINGERLINGS PLANNED TO STOCK PER ACRE, BY MONTH, IN 1971 (continued)

Stocking month	Under 1"<3"	3"<4"	4"<5"	5"<6"	6"<7"	7"<8"	8"<9"	9"<9"	9'& over	Total
Georgia										
January	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0
March	0	0	48	0	0	0	0	0	0	48
April	0	0	53	327	110	0	0	0	0	490
May	0	24	73	0	0	0	0	0	0	97
June	0	384	76	0	0	0	0	0	0	460
July	0	36	0	136	0	0	0	0	0	172
August	0	0	0	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0	0	0	0
October	0	0	0	0	0	0	0	0	0	0
November	0	0	0	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0	0	0	0
Others	0	0	0	0	0	0	0	0	0	0
Total	0	444	250	463	110	0	0	0	0	1,267
California										
January	0	0	0	0	35	0	0	0	0	35
February	0	0	0	0	0	0	0	0	35	35
March	0	0	0	0	0	4	0	0	0	4
April	0	0	0	140	120	125	0	0	0	385
May	0	0	40	0	0	37	0	0	0	77
June	0	0	0	0	0	0	2	0	35	37
July	0	13	0	0	0	0	0	0	0	13
August	0	0	0	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0	0	0	0
October	0	0	35	0	0	0	0	0	0	35
November	0	0	0	0	0	0	0	0	0	0
December	0	0	35	0	0	0	0	0	0	35
Others	0	0	0	0	0	0	0	0	0	0
Total	0	13	110	140	155	166	2	0	70	656

(continued)

SIZE OF FINGERLINGS PLANNED TO STOCK PER ACRE, BY MONTH, IN 1971 (continued)

Stocking month	Under 1" <3"	3" <4"	4" <5"	5" <6"	6" <7"	7" <8"	8" <9"	9" & over	Total
<i>Missouri</i>									
January	0	0	0	10	0	0	34	0	44
February	0	0	0	12	0	0	0	0	12
March	8	0	0	4	0	0	0	2	14
April	0	2	0	3	2	18	0	0	25
May	0	0	0	0	83	80	29	5	197
June	0	2	0	0	6	65	0	0	73
July	0	0	0	0	0	0	0	0	0
August	0	2	0	22	0	0	0	0	24
September	0	0	0	0	0	0	0	0	0
October	0	0	29	0	2	0	0	0	31
November	0	0	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0	0	0
Others	0	0	0	0	0	137	0	0	137
Total	8	6	29	51	93	300	63	7	557
<i>Kansas</i>									
January	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0
March	0	0	0	0	0	55	0	55	110
April	0	1	27	0	0	0	18	18	64
May	0	0	58	1	0	0	0	12	71
June	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0	0	0
October	0	0	0	0	0	0	0	0	0
November	0	0	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0	0	0
Others	0	0	0	0	0	0	0	0	0
Total	0	1	85	1	0	55	18	85	245

(continued)

SIZE OF FINGERLINGS PLANNED TO STOCK PER ACRE, BY MONTH, IN 1971 (continued)

Stocking month	Under 1"<3"	3"<4"	4"<5"	5"<6"	6"<7"	7"<8"	8"<9"	9" & over	Total
	Acres in size groups - - - - -								
<u>Oklahoma</u>									
January	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0	0
April	2	10	0	30	63	0	0	134	239
May	0	0	0	16	104	0	0	0	120
June	0	0	0	0	0	0	20	0	20
July	20	6	0	0	0	0	0	0	26
August	0	0	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0	0	0
October	0	0	110	0	0	0	0	0	110
November	0	12	0	11	0	0	0	0	23
December	0	0	0	0	0	0	0	0	0
Others	0	0	0	0	0	0	0	0	0
Total	22	28	110	57	167	0	20	134	538
<u>Tennessee</u>									
January	0	0	0	0	4	0	2	6	
February	0	0	9	4	0	0	0	13	
March	0	0	15	0	61	0	0	92	
April	0	2	4	0	19	0	230	0	255
May	0	20	15	0	6	0	0	45	86
June	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0
August	4	0	0	0	0	0	0	0	4
September	0	0	0	6	0	0	4	10	
October	0	0	0	0	2	0	0	2	
November	0	0	0	0	24	0	0	0	24
December	0	0	0	0	0	0	0	0	0
Others	0	4	0	0	0	0	0	0	4
Total	4	22	47	10	112	20	230	51	496

(continued)

SIZE OF FINGERLINGS PLANNED TO STOCK PER ACRE, BY MONTH, IN 1971 (continued)

Stocking month	Under 1" <3"	3" <4"	4" <5"	5" <6"	6" <7"	7" <8"	8" <9"	9" & over	Total
	Acres in size groups								
<u>South Carolina</u>									
January	0	0	0	62	0	0	0	0	62
February	0	0	0	0	0	0	0	0	0
March	0	3	88	84	0	0	0	0	175
April	0	0	0	11	0	0	18	0	29
May	0	0	0	0	0	0	0	0	0
June	0	18	0	0	0	0	0	0	18
July	0	0	0	0	0	0	0	0	0
August	0	0	16	14	0	0	0	0	30
September	0	12	23	0	0	0	0	0	35
October	0	15	0	0	0	0	0	0	15
November	0	0	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0	0	0
Others	0	0	0	0	0	0	0	0	0
Total	0	48	127	171	0	0	18	0	364
<u>Others</u>									
January	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0
March	0	0	0	0	5	0	0	0	5
April	0	0	18	0	0	11	0	4	33
May	30	0	0	14	0	0	0	4	48
June	41	0	0	0	2	0	0	0	43
July	0	0	0	0	0	0	0	0	0
August	0	0	15	0	0	0	0	0	15
September	0	0	0	0	15	0	0	18	33
October	0	0	0	0	0	0	0	0	0
November	0	0	0	0	0	0	0	0	376
December	0	0	0	0	0	0	0	0	0
Others	0	0	0	0	0	281	0	0	281
Total	71	0	33	390	22	292	0	26	834

STOCKING AND HARVESTING DATES BY AREA

Harvest month		Month of stocking, 1971										Other
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	
Arkansas												
<u>1971</u>	January	0	0	0	0	0	0	0	0	0	0	0
	February	0	0	0	0	0	0	0	0	0	0	0
	March	0	0	0	0	0	0	0	0	0	0	0
	April	0	0	0	0	0	0	0	0	0	0	0
	May	0	0	0	0	0	0	0	0	0	0	0
	June	104	0	0	0	0	0	0	0	0	0	0
	July	0	0	0	0	0	0	0	0	0	0	0
	August	96	0	0	0	0	0	0	0	0	0	0
	September	168	0	0	283	236	0	0	0	0	0	0
	October	167	193	0	204	104	0	0	0	0	0	0
	November	48	0	65	213	0	0	0	0	0	0	0
	December	320	0	0	181	0	0	0	0	0	0	0
<u>1972</u>	January	0	0	0	0	0	0	0	0	0	0	0
	February	0	0	0	503	109	0	0	0	0	0	0
	March	0	0	0	0	24	0	0	0	0	0	0
	April	0	28	0	0	0	0	0	0	0	0	0
	May	157	24	0	0	268	0	0	0	0	0	0
	June	72	0	0	124	48	209	0	0	0	0	0
	July	0	0	0	135	33	0	51	0	0	0	0
	August	0	0	0	0	0	0	0	0	0	0	0
	September	0	0	0	0	19	0	0	0	0	0	0
	October	0	0	0	0	0	0	0	0	0	0	0
	November	0	0	0	0	0	0	0	0	0	128	130
	December	0	114	0	141	0	0	0	0	0	124	201
	Others	0	0	494	180	318	19	72	165	0	35	0
Total		1132	359	559	1964	1159	228	123	165	0	287	331
											0	707

STOCKING AND HARVESTING DATES BY AREA

Harvest month		Month of stocking, 1971										Other		
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.			
- - - - - Acres														
<u>Louisiana</u>														
<u>1971</u>														
January														
February	0	0	0	0	0	0	0	0	0	0	0	0		
March	0	0	0	0	0	0	0	0	0	0	0	0		
April	0	0	0	0	0	0	0	0	0	0	0	0		
May	0	0	0	0	0	0	0	0	0	0	0	0		
June	0	0	0	0	0	0	0	0	0	0	0	0		
July	0	0	99	0	0	0	0	0	0	0	0	0		
August	0	0	0	79	0	0	0	0	0	0	0	0		
September	0	0	0	0	38	0	0	0	0	0	0	0		
October	59	0	12	258	0	46	0	0	0	0	0	0		
November	0	0	0	83	56	0	0	0	0	0	0	0		
December	0	0	20	675	63	0	0	0	0	0	0	0		
<u>1972</u>														
January														
February	0	0	0	0	0	75	0	0	0	0	0	0		
March	0	0	0	0	166	0	0	0	0	0	0	0		
April	0	0	0	46	0	0	0	0	0	0	0	0		
May	0	0	0	0	243	0	0	0	0	0	0	0		
June	0	0	93	0	0	0	0	0	0	0	41	0		
July	0	0	0	0	0	0	91	0	0	0	0	0		
August	0	0	0	0	0	0	30	0	0	170	0	0		
September	0	0	0	0	0	0	0	0	40	40	50	0		
October	0	0	0	0	0	0	0	0	0	0	12	0		
November	0	0	0	0	0	0	0	0	0	4	55	0		
December	0	0	0	0	66	0	0	0	0	0	341	0		
Others	0	0	16	0	0	0	0	0	0	0	0	33		
Total	59	0	248	1141	323	430	0	121	0	214	499	33		
												352		

STOCKING AND HARVESTING DATES BY AREA

Harvest month	Month of stocking, 1971											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<u>Alabama</u>												
<u>1971</u>												
January	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0	0	0
August	0	0	0	22	0	0	0	0	0	0	0	0
September	0	0	0	44	0	0	0	0	0	0	0	460
October	69	70	417	166	0	0	0	0	0	0	0	0
November	52	150	60	11	57	0	0	0	0	0	0	0
December	0	24	0	0	0	0	0	0	0	0	0	0
<u>1972</u>												
January	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0	0	0	0	0
April	0	0	0	128	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	22	0	0	0	0	0	0
August	0	0	0	0	0	0	54	0	0	0	0	0
September	0	0	0	0	0	0	33	50	0	0	0	0
October	0	0	0	0	182	0	0	0	0	0	52	0
November	0	0	0	0	0	30	0	0	0	193	0	0
December	0	0	0	0	0	0	0	0	0	0	0	0
Others	0	22	0	0	0	0	25	0	0	0	0	0
Total	121	266	477	371	239	52	25	87	50	193	0	52
												460

STOCKING AND HARVESTING DATES BY AREA

Harvest month	Month of stocking, 1971											Acres -
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	
<u>Texas</u>												
<u>1971</u>												
January	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0	0	0
August	0	16	0	0	0	0	0	0	0	0	0	0
September	0	0	33	9	0	0	0	0	0	0	0	0
October	0	0	23	29	0	0	0	0	0	0	0	0
November	74	23	4	157	384	0	0	0	0	0	0	0
December	8	4	7	0	72	0	0	0	0	0	0	0
<u>1972</u>												
January	0	8	0	23	22	16	0	0	0	0	0	0
February	0	8	0	23	0	16	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	272	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0	0	0
August	0	0	0	0	0	15	51	0	0	4	0	0
September	0	0	0	0	0	0	0	0	0	0	0	0
October	0	0	0	0	0	0	0	0	0	9	0	0
November	0	0	0	0	0	0	0	0	0	17	3	0
December	0	0	0	0	0	0	0	0	103	0	0	0
Others	0	0	0	0	0	0	0	0	0	0	0	470
Total	82	59	67	241	750	121	15	51	103	17	7	0
												470

STOCKING AND HARVESTING DATES BY AREA

Harvest month	Month of stocking, 1971												Acres -	Other
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.		
Georgia														
1971														
January	0	0	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0	0	0	0	0	0
September	0	0	0	0	68	0	0	0	0	0	0	0	0	0
October	0	0	0	0	150	0	0	0	0	0	0	0	0	0
November	0	0	48	272	0	0	0	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972														
January	0	0	0	0	0	0	0	0	39	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0	0	0	0	0
March	0	0	0	0	97	0	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	50	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	460	0	0	0	0	0
July	0	0	0	0	0	0	0	0	83	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0	0	0	0	0	0	0	0
October	0	0	0	0	0	0	0	0	0	0	0	0	0	0
November	0	0	0	0	0	0	0	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Others	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	48	490	97	460	172	0	0	0	0	0	0	1267

STOCKING AND HARVESTING DATES BY AREA

Harvest month	Month of stocking, 1971											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<u>California</u>												
<u>1971</u>												
January	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0	0	0	0	0	0
October	0	35	0	21	56	0	0	0	0	0	0	0
November	35	0	3	0	0	0	0	0	0	0	0	0
December	0	0	1	90	0	0	0	0	0	0	0	0
<u>1972</u>												
January	0	0	0	120	0	0	0	0	0	0	0	0
February	0	0	35	0	0	0	0	0	0	0	0	0
March	0	0	119	0	37	0	0	0	0	0	0	0
April	0	0	0	0	21	0	1	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	13	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0	0	0	0	0	0
October	0	0	0	0	0	0	0	0	0	35	0	0
November	0	0	0	0	0	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0	0	0	0	35	0
Others	0	0	0	0	0	0	0	0	0	0	0	0
Total	35	35	4	385	77	37	13	0	0	35	0	35
												656

STOCKING AND HARVESTING DATES BY AREA

Harvest month		Month of stocking, 1971										Dec.	Other
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	
Missouri													
<u>1971</u>													
January	0	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	4	0	0	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0	0	0	0	0	0	0
October	0	0	7	3	43	0	0	0	0	0	0	0	0
November	0	12	3	3	10	0	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0	0	0	0	0	0	0
<u>1972</u>													
January	0	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0	0	0	0
March	0	0	0	19	0	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	76	0	0	0	0	0	0	0	0
June	0	0	0	0	45	35	0	0	0	0	0	0	0
July	0	0	0	0	0	38	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0	0	0	0	0	0	0
October	0	0	0	0	0	0	0	0	0	24	0	0	0
November	44	0	0	0	0	23	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0	0	0	0	0	0	0
Others	0	0	0	0	0	0	0	0	0	0	0	0	137
Total	44	12	14	25	197	73	0	24	0	31	0	0	137

STOCKING AND HARVESTING DATES BY AREA

Harvest month	Month of stocking, 1971												Acres -
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
Kansas													
1971													
January	0	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0	0	0	0	0	0	0
October	0	0	55	0	55	0	0	0	0	0	0	0	0
November	0	0	0	0	22	0	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0	0	0	0	0	0	0
1972													
January	0	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	55	0	16	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0	0	0	0	0	0	0
October	0	0	0	0	42	0	0	0	0	0	0	0	0
November	0	0	0	0	0	0	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0	0	0	0	0	0	0
Others	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	110	64	71	0	0	0	0	0	0	0	245

STOCKING AND HARVESTING DATES BY AREA

Harvest month	Month of stocking, 1971											Other
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	
Oklahoma												
<u>1971</u>												
January	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0	0	0	0	0	0
October	0	0	0	0	71	67	20	0	0	0	0	0
November	0	0	0	0	15	0	0	0	0	0	0	0
December	0	0	0	0	101	0	0	0	0	0	0	0
<u>1972</u>												
January	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0	0	0
March	0	0	0	0	0	53	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0	0	0	0
September	0	0	0	0	39	0	0	0	0	0	0	0
October	0	0	0	0	3	0	0	26	0	0	0	0
November	0	0	0	0	0	0	0	0	0	0	23	0
December	0	0	0	0	0	10	0	0	0	0	0	0
Others	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	239	120	20	26	0	0	110	23
												538

STOCKING AND HARVESTING DATES BY AREA

Harvest month	Month of stocking, 1971											Acres
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	
Tennessee												
<u>1971</u>												
January	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	7	0	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0	0	0	0
September	6	0	0	0	0	0	0	0	0	0	0	0
October	0	13	0	14	55	0	0	0	0	0	0	0
November	0	0	0	168	8	0	0	0	0	0	0	0
December	0	0	19	0	23	0	0	0	0	0	0	0
<u>1972</u>												
January	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0	0	0	0
September	0	0	33	0	0	0	0	0	0	0	0	0
October	0	0	0	0	0	0	0	0	0	0	24	0
November	0	0	0	73	0	0	0	4	0	2	0	0
December	0	0	33	0	0	0	0	0	10	0	0	0
Others	0	0	0	0	0	0	0	0	0	0	0	4
Total	6	13	92	255	86	0	0	4	10	2	24	0

STOCKING AND HARVESTING DATES BY AREA

Harvest month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Month of stocking, 1971	
													Acres	Other
South Carolina														
1971														
January	0	0	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0	0	0	0	0	0
September	0	0	70	11	0	0	0	0	0	0	0	0	0	0
October	62	0	0	0	0	0	0	0	0	0	0	0	0	0
November	0	0	105	14	0	0	0	0	0	0	0	0	0	0
December	0	0	0	4	0	0	0	0	0	0	0	0	0	0
1972														
January	0	0	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	18	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	30	0	0	0	0
August	0	0	0	0	0	0	0	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0	0	0	0	35	0	0	0
October	0	0	0	0	0	0	0	0	0	0	0	15	0	0
November	0	0	0	0	0	0	0	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Others	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	62	0	175	29	0	18	0	30	35	15	0	0	0	0

STOCKING AND HARVESTING DATES BY AREA

Harvest month	Month of stocking, 1971											Acres -	
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
Others													
1971													
January	0	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0	0	0	0	0
September	0	0	0	16	0	0	0	0	0	0	0	0	0
October	0	0	3	9	0	0	0	0	0	0	0	0	0
November	0	0	0	4	18	0	0	0	0	0	0	0	0
December	0	0	2	0	0	2	0	0	0	0	0	0	0
1972													
January	0	0	0	0	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0	0	0	0	0
March	0	0	0	0	30	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	15	0	0	0
August	0	0	0	0	0	0	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0	0	0	18	0	0	0
October	0	0	0	0	0	0	0	0	0	0	0	0	0
November	0	0	0	0	0	0	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0	0	0	0	0	0	0
Others	0	0	0	4	0	41	0	0	15	0	376	0	281
Total	0	0	5	33	48	43	0	1.5	33	0	376	0	281

VOLUME OF FINGERLINGS SOLD BY SIZE AND PRICE,
BY AREAS, 1970

Size of fingerling	Cents per fingerling					Number of fingerlings sold	8 & over	total
	<2	3<4	4<5	5<6	6<7			
Arkansas								
Under 4"	2,194,763	3,310,028	637,294	4,877	3,251	0	0	6,150,213
4"-6"	0	0	325,150	4,930,901	1,950,900	130,060	0	7,337,011
6"-8"	0	0	0	78,036	256,868	2,183,382	373,922	2,892,208
8"-10"	0	0	0	0	0	0	1,625	1,625
10" & over	0	0	0	0	0	0	373,922	373,922
total	2,194,763	3,310,028	962,444	5,013,814	2,211,019	2,313,442	749,469	16,754,979
Louisiana								
Under 4"	566,364	577,691	152,918	1,132,728	0	0	0	2,429,701
4"-6"	0	566,364	0	577,691	61,167	56,636	0	1,261,858
6"-8"	1,132,728	0	0	688,698	81,556	0	0	1,902,982
8"-10"	0	0	0	0	0	0	0	0
10" & over	0	0	0	0	0	0	0	0
total	1,699,092	1,144,055	152,918	2,399,117	142,723	56,636	0	5,594,541
Alabama								
Under 4"	0	0	1,102,060	0	0	0	0	1,102,060
4"-6"	0	0	9,662,996	159,718	0	0	638,875	10,461,589
6"-8"	0	0	0	958,313	0	70,276	159,718	1,188,307
8"-10"	0	0	0	0	0	0	0	0
10" & over	0	0	0	0	0	0	0	0
total	0	0	9,662,996	2,220,091	0	70,276	798,593	12,751,956

(continued)

VOLUME OF FINGERLINGS SOLD BY SIZE AND PRICE,
BY AREAS, 1970

Size of fingerling	Cents per fingerling			Number of fingerlings sold	7<8	8 & over	total
	<2	3<4	4<5		5<6	6<7	
Texas							
Under 4"	0	17,562	0	191,435	0	0	184,410
4"-6"	0	0	0	0	228,317	0	324,913
6"-8"	0	0	0	0	526,886	0	553,230
8"-10"	0	0	0	0	0	0	755,203
10" & over	0	0	0	0	0	0	8,781
total	0	17,562	0	191,435	755,203	0	816,672
Georgia							
Under 4"	0	0	0	1,324,384	0	0	1,324,384
4"-6"	0	0	0	397,315	165,548	0	331,096
6"-8"	0	0	0	0	0	0	0
8"-10"	0	0	0	0	0	0	0
10" & over	0	0	0	0	0	0	0
total	0	0	1,721,699	165,548	165,548	0	331,096
California							
Under 4"	0	0	0	0	0	0	103,339
4"-6"	0	0	0	0	0	1,043,726	1,043,726
6"-8"	0	0	0	0	0	206,678	206,678
8"-10"	0	0	0	0	0	3,141,514	3,141,514
10" & over	0	0	0	0	0	0	0
total	0	0	0	0	0	4,495,247	4,495,257

(continued)

VOLUME OF FINGERLINGS SOLD BY SIZE AND PRICE,
BY AREAS, 1970

Size of fingerling	Cents per fingerling			Number of fingerlings sold	total
	<2	3<4	4<5		
	5<6	6<7	7<8	8 & over	
Missouri					
Under 4"	147,191	313,174	78,293	297,515	0
4"-6"	0	0	229,661	469,761	0
6"-8"	0	0	0	0	16,702
8"-10"	0	0	0	0	0
10" & over	0	0	0	0	0
total	147,191	313,174	307,954	767,276	0
Kansas					
Under 4"	0	60,410	0	32,218	4,027
4"-6"	0	0	1,510,263	1,524,359	0
6"-8"	0	0	0	0	0
8"-10"	0	0	0	0	0
10" & over	0	0	0	0	0
total	0	60,410	1,510,263	1,556,577	4,027
Oklahoma					
Under 4"	0	0	120,652	28,152	0
4"-6"	0	0	0	53,623	107,246
6"-8"	0	0	0	0	0
8"-10"	0	0	0	0	0
10" & over	0	0	0	0	0
total	0	0	120,652	28,152	53,623
				107,246	80,433
					390,106

(continued)

VOLUME OF FINGERLINGS SOLD BY SIZE AND PRICE
BY AREAS, 1970

Size of fingerling	Cents per fingerling			Number of fingerlings sold	7<8	8 & over	total
	<2	3<4	4<5				
Tennessee							
Under 4"	0	0	0	0	0	0	0
4"-6"	0	0	52,317	176,572	3,923	0	0
6"-8"	0	0	0	0	1,177,151	26,158	232,812
8"-10"	0	0	0	0	0	0	1,203,309
10" & over	0	0	0	0	0	0	0
total	0	0	52,317	176,572	3,923	1,177,151	26,158
South Carolina							
Under 4"	0	0	0	5,000	0	0	0
4"-6"	0	0	0	300,000	50,000	0	350,000
6"-8"	0	0	0	0	0	0	200,000
8"-10"	0	0	0	0	0	0	0
10" & over	0	0	0	0	0	0	0
total	0	0	305,000	50,000	0	200,000	555,000
Others							
Under 4"	120,000	0	0	0	0	20,000	140,000
4"-6"	0	0	0	25,000	121,000	130,000	276,000
6"-8"	0	0	0	50,000	55,000	115,000	220,000
8"-10"	0	0	0	0	0	50,000	50,000
10" & over	0	0	0	0	0	10,000	10,000
total	120,000	0	0	50,000	25,000	176,000	696,000

VALUE OF FINGERLING SALES
BY SIZE AND PRICE, BY AREAS, 1970

Size of fingerling	<2		3<4		4<5		5<6		Cents per fingerling		Total
Arkansas											
Under 4"	43,895	115,850	28,678	268	271,199	126,808	211	0	0	188,902	
4"-6"	0	0	14,631	0	4,291	16,696	9,754	0	0	422,392	
6"-8"	0	0	0	0	0	0	163,753	29,913	214,653		
8"-10"	0	0	0	0	0	0	0	0	130	130	
10" & over	0	0	0	0	0	0	0	0	29,913	29,913	
Total	43,895	115,850	43,309	275,759	143,715	173,508	59,956	59,956	855,990		
Louisiana											
Under 4"	11,327	20,219	6,881	62,300	0	0	0	0	0	100,727	
4"-6"	0	19,822	0	31,773	3,975	4,247	0	0	0	59,817	
6"-8"	22,654	0	0	37,878	5,301	0	0	0	0	65,833	
8"-10"	0	0	0	0	0	0	0	0	0	0	
10" & over	0	0	0	0	0	0	0	0	0	0	
Total	33,981	40,041	6,881	131,951	9,276	4,247	0	0	0	226,377	
Alabama											
Under 4"	0	0	0	60,613	0	0	0	0	0	60,613	
4"-6"	0	0	434,834	8,784	0	0	0	0	51,110	494,728	
6"-8"	0	0	0	52,707	0	0	0	0	12,777	70,754	
8"-10"	0	0	0	0	0	0	0	0	0	0	
10" & over	0	0	0	0	0	0	0	0	0	0	
Total	0	0	434,834	122,105	0	0	5,270	63,887	626,095		
Texas											
Under 4"	0	614	0	10,528	0	0	0	0	14,752	25,894	
4"-6"	0	0	0	0	14,840	0	0	0	25,993	40,833	
6"-8"	0	0	0	0	34,247	0	0	0	18,265	52,512	
8"-10"	0	0	0	0	0	0	0	0	702	702	
10" & over	0	0	0	0	0	0	0	0	5,620	5,620	
Total	0	614	0	10,528	49,087	0	0	0	65,332	125,561	

(continued)

VALUE OF FINGERLING SALES
BY SIZE AND PRICE, BY AREAS, 1970

Size of fingerling	<2		3<4		4<5		5<6		6<7		7<8		8 & over		Total
		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars		Dollars	
<u>Georgia</u>															
Under 4"	0	0	0	0	72,841	0	0	0	12,416	26,487	0	0	72,841	71,515	
4"-6"	0	0	0	0	21,852	10,760	0	0	0	0	0	0	0	0	
6"-8"	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8"-10"	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10" & over	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	94,693	10,760	12,416	26,487	144,356							
<u>California</u>															
Under 4"	0	0	0	0	0	0	0	0	0	0	0	0	8,267	8,267	
4"-6"	0	0	0	0	0	0	0	0	0	0	0	0	83,498	83,498	
6"-8"	0	0	0	0	0	0	0	0	0	0	0	0	16,534	16,534	
8"-10"	0	0	0	0	0	0	0	0	0	0	0	0	251,321	251,321	
10" & over	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	359,620	359,620	
<u>Missouri</u>															
Under 4"	2,943	10,961	3,523	16,363	0	0	0	0	0	0	0	0	11,524	45,314	
4"-6"	0	0	10,334	25,836	0	0	0	0	0	156	8,768	8,768	45,094	45,094	
6"-8"	0	0	0	0	0	0	0	0	0	1,252	9,019	9,019	10,271	10,271	
8"-10"	0	0	0	0	0	0	0	0	0	0	13,779	13,779	13,779	13,779	
10" & over	0	0	0	0	0	0	0	0	0	0	0	0	83	83	
Total	2,943	10,961	13,857	42,200	0	0	0	0	1,409	0	0	0	43,176	114,546	
<u>Kansas</u>															
Under 4"	0	2,114	0	1,771	261	3,020	0	0	0	0	0	0	80	7,246	
4"-6"	0	0	67,961	83,839	0	0	0	0	0	0	0	0	7,007	158,807	
6"-8"	0	0	0	0	0	0	0	0	0	0	0	0	80	80	
8"-10"	0	0	0	0	0	0	0	0	0	0	0	0	241	241	
10" & over	0	0	0	0	0	0	0	0	0	0	0	0	805	805	
Total	0	2,114	67,961	85,611	261	3,020	0	0	0	0	0	0	8,215	167,182	

(continued)

VALUE OF FINGERLING SALES
BY SIZE AND PRICE, BY AREAS, 1970

Size of fingerling	Cents per fingerling						Total
	<2	3<4	4<5	5<6	6<7	7<8	
Oklahoma							
<u>Under 4"</u>	0	0	5,429	1,548	0	0	6,977
4"-6"	0	0	0	0	3,485	8,043	5,362
6"-8"	0	0	0	0	0	0	0
8"-10"	0	0	0	0	0	0	0
10" & over	0	0	0	0	0	0	1,072
Total	0	0	5,429	1,548	3,485	8,043	24,939
Tennessee							
<u>Under 4"</u>	0	0	0	0	0	0	0
4"-6"	0	0	2,354	9,711	254	0	0
6"-8"	0	0	0	0	0	88,286	2,092
8"-10"	0	0	0	0	0	0	0
10" & over	0	0	0	0	0	0	0
Total	-	-	2,354	9,711	254	88,286	2,092
South Carolina							
<u>Under 4"</u>	0	0	0	275	0	0	275
4"-6"	0	0	0	16,500	3,250	0	0
6"-8"	0	0	0	0	0	0	16,000
8"-10"	0	0	0	0	0	0	0
10" & over	0	0	0	0	0	0	0
Total	0	0	16,775	3,250	0	16,000	36,025
Others							
<u>Under 4"</u>	2,400	0	0	0	0	0	1,600
4"-6"	0	0	0	1,625	9,075	10,400	21,100
6"-8"	0	0	2,750	0	4,125	9,200	16,075
8"-10"	0	0	0	0	0	4,000	4,000
10" & over	0	0	0	0	0	800	800
Total	2,400	0	2,750	1,625	13,200	26,000	45,975

ARKANSAS: VOLUME OF FOODSIZE CATFISH SALES
BY TYPE BUYER, BY MONTH, 1970

Month	Types of buyer					Total
	Processor	Live-hauler	Pay lake	Individual	Eating est.	
			pounds	-	-	-
January	313,406					313,406
February	435,834					435,834
March	371,820					371,820
April	157,636					157,636
May	69,349					69,349
June	121,095					121,095
July	114,960					114,960
August	161,637					161,637
September	214,183					214,183
October	298,202					298,202
November	214,716					214,716
December	<u>194,445</u>	<u>299,682</u>	<u>91,600</u>	<u>174,322</u>	<u>-</u>	<u>194,445</u>
Total	2,667,283	3,215,475	201,387	1,468,591		839,195
						8,391,931
						<u>1,059,809</u>

LOUISIANA: VOLUME OF FOODSIZE CATFISH SALES
BY TYPE BUYER, BY MONTH, 1970

Month	Types of buyer					Total
	Processor	Live-hauler	Pay Lake	Individual - pounds	Eating est.	
January				55,419		55,419
February		50,201				50,201
March						
April			18,473		18,473	
May	1,110,981		4,907		1,115,888	
June						
July			4,789		4,789	
August						
September	67,663		93,808		161,471	
October	209,537		21,071		230,608	
November	187,710		67,831		255,541	
December	556,582	38,485	66,684	271,132	167,686	856,569
Total	2,182,674	38,485	71,473	532,641	167,686	2,992,959

ALABAMA: VOLUME OF FOODSIZE CATFISH SALES
BY TYPE BUYER, BY MONTH, 1970

Month	Processor	Live-hauler	Pay lake	Types of buyer			Total
				Individual	Eating est.	Other	
January	206,831						206,831
February	321,290						321,290
March	82,331						82,331
April	60,242		6,510				66,752
May				10,647			10,647
June				17,148			17,148
July				32,152			32,152
August	132,532		23,579				156,111
September	188,758			41,702			230,460
October	443,783			105,587			549,370
November	351,412			63,885			415,297
December	<u>220,887</u>				<u>25,685</u>		<u>246,572</u>
Total	2,008,066		79,389	221,821	25,685		2,334,961

TEXAS: VOLUME OF FOODSIZE CATFISH SALES
BY TYPE BUYER, BY MONTH, 1970

Month	Types of buyer					Total
	Processor	Live-hauler	Pay lake	Individual	Eating est.	
				pounds	-	-
January						
February						
March						
April				21,111		21,111
May				154,812		154,812
June				43,980		43,980
July						
August						
September				228,700		228,700
October				124,905		124,905
November				253,329		253,329
December				175,923		175,923
Total	191,828	1,759,228	1,232,698			3,183,754

GEORGIA: VOLUME OF FOODSIZE CATFISH SALES
BY TYPE BUYER, BY MONTH, 1970

Month	Types of buyer					Total
	Processor	Live hauler	Pay lake	Individual	pounds	
January						
February			120,726			120,726
March			144,151			144,151
April						
May						
June						
July			120,726			120,726
August						
September						
October			25,729			25,729
November			40,181			40,181
December			81,085		13,499	94,584
Total			900,943		79,409	980,352

CALIFORNIA: VOLUME OF FOODSIZE CATFISH SALES
BY TYPE BUYER, BY MONTH, 1970

Month	Types of buyer					Total
	Processor	Live hauler	Pay lake	Individual	Eating est.	
	pounds					
January						
February						49,483 49,483
March						221,694 221,694
April						31,017 31,017
May						26,425 26,425
June						12,192 35,136
July						16,615 17,688
August						21,520 33,712
September						18,355 2,578 20,933
October						20,096 6,535 15,497 24,921 67,049
November						11,393 2,146 13,539
December						20,887 33,512 2,153 49,482 106,034
Total						158,235 257,784 9,754 17,650 179,287 622,710

MISSOURI: VOLUME OF FOODSIZE CATFISH SALES
BY TYPE BUYER, BY MONTH, 1970

Month	Types of buyer					Total
	Processor	Live hauler	Pay lake	Individual	Eating est.	
			- pounds -	- - -	- - -	- - -
January						
February						
March						
April						
May	13,054					
June	38,173					
July	38,173					
August	42,524					
September	20,767	3,267				
October	22,548	6,224				
November	22,548					
December		4,011	14,449			18,460
Total	197,787	13,502	14,449	11,133	236,871	

KANSAS: VOLUME OF FOODSIZE CATFISH SALES
BY TYPE BUYER, BY MONTH, 1970

Month	Types of buyer					Total
	Processor	Live hauler	Pay lake	Individual	Eating est.	
			- pounds -	- - -	- - -	- - -
January						
February						
March						
April						
May			26,405		3,153	29,558
June						
July			41,295			41,295
August			4,640	41,295		45,935
September			4,641	38,315	32,673	75,629
October			4,641			4,641
November				41,494		41,494
December					9,729	9,729
Total			13,922	198,533	35,826	248,281

OKLAHOMA: VOLUME OF FOODSIZE CATFISH SALES
BY TYPE BUYER, BY MONTH, 1970

Month	Processor	Live hauler	Pay lake	Types of buyer			Total
				Individual	Eating est.	Other	
January							- - - - -
February			4,550				4,550
March			36,818				40,250
April							
May							
June							
July							
August			23,094	13,708			36,802
September			41,298	36,679			77,977
October			23,094	36,679			56,773
November			6,137	9,459			15,596
December					6,970		6,970
Total			41,368	104,025	96,525		241,918

TENNESSEE: VOLUME OF FOODSIZE CATFISH SALES
BY TYPE BUYER, BY MONTH, 1970

Month	Types of buyer					Total
	Processor	Live hauler	Pay lake	Individual	Eating est.	
			- pounds	-	-	-
January	17,188					17,188
February				28,064		28,064
March						
April						
May				3,852		3,852
June				5,503		5,503
July					11,224	11,224
August				17,059	22,447	39,506
September						
October				7,500		7,500
November	97,552			26,964	7,500	132,016
December	<u>1117,526</u>			<u>468,837</u>	<u>3,776</u>	<u>590,139</u>
Total	232,266			550,279	52,447	834,992

SOUTH CAROLINA: VOLUME OF FOODSIZE CATFISH SALES
BY TYPE BUYER, BY MONTH, 1970

Month	Types of buyer					Total
	Processor	Live hauler	Pay lake	Individual	Eating est.	
	- - -	- - -	- - -	- - -	- - -	- - -
January						
February						
March						
April						
May						
June						
July						
August						
September						
October						
November						
December						
Total	33,765			12,488		46,253

OTHERS: VOLUME OF FOODSIZE CATFISH SALES
BY TYPE BUYER, BY MONTH, 1970

Month	Types of buyer					Total
	Processor	Live hauler	Pay lake	Individual	Eating est.	
	- - -	- - -	- - -	- - -	- - -	- - -
January						
February						
March						
April						
May						
June						
July						
August						
September						
October						
November						
December						
Total						

ARKANSAS: VALUE OF FOODSIZE CATFISH SOLD
BY TYPE BUYER, BY MONTH, 1970

Month	Processor	Live hauler	Pay lake	Types of buyer			Total
				Individual	Eating est.	Others	
January	103,425						103,425
February	135,109			65,875			200,984
March	130,137			7,974			351,979
April	48,867	44,537					125,428
May	24,272	168,137					192,409
June	38,750	201,311	38,582				278,643
July	37,937	180,967	6,676	56,732			282,312
August	54,957	178,636					233,593
September	70,680	184,584		125,932			381,196
October	95,425	85,489		330,805			523,174
November	66,562	64,310		617			131,489
December	62,222	119,873	33,892	78,445			95,923
Total	868,343	1,227,844	79,150	666,380			3,194,987

LOUISIANA: VALUE OF FOODSIZE CATFISH SOLD
BY TYPE BUYER, BY MONTH, 1970

Month	Processor	Live-hauler	Types of buyer			Total
			Pay lake	Individual	Eating est.	
January			36,022			36,022
February		17,570				17,570
March						
April			9,237			9,237
May		344,404		2,699		347,103
June						
July			1,916			1,916
August						
September		22,329		42,214		64,543
October		67,052		10,536		77,588
November		56,313		33,916		90,229
December	<u>166,975</u>	<u>13,470</u>	<u>26,674</u>	<u>12,481</u>	<u>142,533</u>	<u>362,133</u>
Total	674,643	13,470	28,590	147,105	142,533	1,006,341

ALABAMA: VALUE OF FOODSIZE CATFISH SOLD
BY TYPE BUYER, BY MONTH, 1970

Month	Processor	Live-hauler	Pay lake	Types of buyer			Total
				Individual	dollars	Other	
January	66,186						66,186
February	102,813						102,813
March	28,816						28,816
April	18,073		3,255				21,328
May				5,856			5,856
June				8,574			8,574
July				16,076			16,076
August		43,736		11,790			55,526
September		62,290		22,519			84,809
October		146,448		52,794			199,242
November		112,452		31,943			144,395
December		75,102				12,843	87,945
Total	655,915		39,695	113,112	12,843		821,565

TEXAS: VALUE OF FOODSIZE CATFISH SOLD
BY TYPE BUYER, BY MONTH, 1970

Month	Processor	Live-hauler	Pay lake	Types of buyer			Total
				Individual	Eating est.	Other	
January							- - - - -
February			378,243				378,243
March							- - - - -
April			10,556				10,556
May			102,176				102,176
June			21,990				21,990
July							- - - - -
August							- - - - -
September			173,812				173,812
October		49,875	82,437		231,747		364,059
November		49,875	177,330		348,114		575,319
December		—	112,591		406,298		<u>518,888</u>
Total		99,750	1,059,135		986,159		2,145,044

GEORGIA: VALUE OF FOODSIZE CATFISH SOLD
BY TYPE BUYER, BY MONTH, 1970

Month	Types of buyer					Total
	Processor	Live-hauler	Pay lake	Individual	Eating est.	
January						
February	38,632					38,632
March	51,894					51,894
April						
May						
June						
July	42,254					42,254
August						
September						
October					9,005	9,005
November	130,277				20,091	150,368
December	<u>28,380</u>				<u>6,750</u>	<u>35,130</u>
Total	291,437				35,846	327,283

CALIFORNIA: VALUE OF FOODSIZE CATFISH SOLD
BY TYPE BUYER, BY MONTH, 1970

Month	Types of buyer					Total
	Processor	Live-hauler	Pay lake	Individual	Eating est.	
January						
February					27,216	27,216
March					77,593	77,593
April					17,059	17,059
May	11,891					11,891
June	10,325				7,315	17,640
July	6,646				644	7,290
August	9,038					926
September	7,342			1,547		8,889
October	7,034			5,751	8,523	16,199
November	4,215			1,824		37,507
December	<u>7,728</u>		<u>25,134</u>		<u>1,830</u>	<u>32,163</u>
Total	64,219		104,274	8,219	10,353	107,877
						294,942

MISSOURI: VALUE OF FOODSIZE CATFISH SOLD
BY TYPE BUYER, BY MONTH, 1970

Month	Types of buyer					Total
	Processor	Live-hauler	Pay lake	Individual	Eating est.	
			- dollars	- - -	- - -	- - -
January						
February						
March						
April						
May	5,222					5,222
June	15,269					15,269
July	15,269					15,269
August	17,010					17,010
September	10,176	2,124				12,300
October	10,147	4,668				20,270
November	12,401					12,401
December		2,006	7,947			9,953
Total	85,494	8,798	7,947			107,694

KANSAS: VALUE OF FOODSIZE CATFISH SOLD
BY TYPE BUYER, BY MONTH, 1970

Month	Types of buyer					Total
	Processor	Live-hauler	Pay lake	Individual	Eating est.	
	- dollars - - - - -					- - - - -
January						
February						
March						
April						
May	19,276				1,577	20,853
June						
July	30,971					30,971
August	2,413	30,971				33,384
September	2,413	29,119				49,502
October	2,413					2,413
November	24,896					24,896
December		5,837				5,837
Total	7,239	141,070			19,547	167,856

OKLAHOMA: VALUE OF FOODSIZE CATFISH SOLD
BY TYPE BUYER, BY MONTH, 1970

Month	Types of buyer					Total
	Processor	Live-hauler	Pay lake	Individual	Eating rest.	
						dollars
January						
February		1,593				1,593
March		12,886		1,373		14,259
April						
May						
June						
July						
August				9,007	8,910	17,917
September				15,280	21,891	37,171
October				8,083	21,891	29,974
November				3,621	6,148	9,769
December				4,112	—	4,112
Total		14,479		41,476	58,840	114,795

TENNESSEE: VALUE OF FOODSIZE CATFISH SOLD
BY TYPE BUYER, BY MONTH, 1970

Month	Types of buyer					Total
	Processor	Live-hauler	Pay lake	Individual	Eating est.	
			dollars			
January	6,016					6,016
February			16,838			16,838
March						
April						
May						
June			1,348			1,348
July			3,852			3,852
August				8,418		8,418
September			10,235	16,835		27,070
October				5,625		5,625
November	37,070		13,482	5,625		56,177
December	41,134		201,600	2,832		245,561
Total	84,220		247,355	39,335		370,910

SOUTH CAROLINA: VALUE OF FOODSIZE CATFISH SOLD
BY TYPE BUYER, BY MONTH, 1970

Month	Types of buyer					Total
	Processor	Live-hauler	Pay lake	Individual	Eating est.	
January						
February						
March						
April						
May						1,585
June						
July						
August						
September						
October						6,996
November						3,160
December						
Total						17,926
	13,181	4,745				

OTHERS: VALUE OF FOODSIZE CATFISH SOLD
BY TYPE BUYER, BY MONTH, 1970

Month	Processor	Live-hauler	Pay lake	Types of buyer			Total
				Individual	Eating est.	Other	
January							- - - - -
February							- - - - -
March							- - - - -
April							- - - - -
May							- - - - -
June							- - - - -
July							17,958
August							17,958
September							16,444
October							42,193
November							39,748
December							110,145
Total							17,958
							186,740



PENN STATE UNIVERSITY LIBRARIES



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